

MEMOIRS OF THE BOTANICAL SURVEY OF
SOUTH AFRICA
MEMOIRS VAN DIE BOTANIESE OPNAME
VAN SUID-AFRIKA

No. 55

1987

BARRIER PLANTS
OF
SOUTHERN AFRICA

L. HENDERSON



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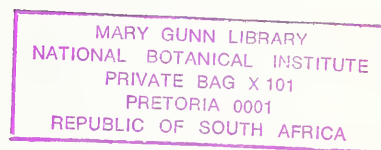
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BARRIER PLANTS

OF

SOUTHERN AFRICA

by

L. HENDERSON

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1987

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Foreword

Animals and primitive peoples can be seen to make use of natural barriers with almost every step they take: to prevent their being seen by the prey they stalk, to keep them safe from predators, to protect them from biting winds and searing heat. Small wonder that as civilization grew, people were often pre-occupied with creating better artificial barriers, exactly where they wanted them, to serve particular purposes. Hedges for privacy or security, windbreaks and shelter-belts, ornamental screens and territory demarcations are part of every rural and suburban scene. The use of plants as barriers in southern Africa can be traced through our earliest historical records to the stockades of iron-age peoples, Van Riebeeck's hedge of wild almond, *Brabejum stellatifolium*, and to hastily severed branches of the sweet-thorn, *Acacia karroo*, which beleaguered Voortrekkers packed between their protective circle of wagons. It is strange that so little research has been done on barrier plants in South Africa, although Africa abounds in hardy, twiggy, often thorny shrubs and trees — particularly suitable as security barriers. It is also regrettable that so much use has been made of alien species, many of which have become veld invaders that transform habitats and landscapes and threaten the survival of indigenous species. As a science, therefore, barrier planting in southern Africa is still in its infancy. It is hoped that the present publication will stimulate interest and critical observation and result in better information and better plantings.

We hope that the present publication, the first attempt at a comprehensive treatment of currently used and potential barrier plants in South Africa, will help to rectify the situation. It should focus attention on:

- the qualities required for barrier plantings for different purposes,
- the alternative choices available when selecting species,
- the problems that can result from the use of invasive aliens.

It must be accentuated, however, that only general indications can be given as to the suitability of particular species to particular climates and habitats. As all gardeners will have discovered to their cost at some time, local conditions which are almost infinitely variable, may make all the difference between the success or failure of a planting.

Pretoria, February 1986

B. DE WINTER
Director: Botanical Research Institute

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The succulent *Euphorbia* spp. are often used by rural peoples in southern Africa as barrier plants. They are usually well adapted to dry conditions and poor soils, easily propagated from cuttings and in many cases, are resistant to browsing, due to the very toxic milky latex. Illustrated here is the tree Euphorbia, *Euphorbia ingens*. Cuttings of this species as well as plants of an alien *Agave* sp. have been used to fill in the lower gaps of the barrier.

Abstract

HENDERSON, L. 1987. Barrier plants of southern Africa. *Memoirs of the Botanical Survey of South Africa* No. 55, pp. 97.

The memoir presents information on 504 species of which 220 are indigenous and 96 of these are being suggested for use as barrier plants for the first time. Of the 408 species known as barrier plants in southern Africa, and which have been used as security hedges, garden hedges and windbreaks, 284 are aliens. Attention is drawn to the need to replace alien species which have become aggressive invaders, with less aggressive species, preferably indigenous.

Security hedge plants are illustrated by 47 photographs. The indigenous species are described and recommended for the four major climatic regions of southern Africa. The advantages of combination plantings of two or more species with different characteristics are emphasized. Alien species are listed with the climatic regions in which they have been grown in southern Africa or to which they are suited. Weedy and aggressive species are indicated.

Uittreksel

Die memoir verskaf inligting oor 504 spesies waarvan 220 inheems is en 96 hiervan vir die eerste keer as versperringsplante aanbeveel word. Van die 408 spesies wat as versperringsplante in suidelike Afrika bekend is en as veiligheidsomheinings, heinings om tuine en as windskerms gebruik word, is 284 uitheems. Aandag word gevestig op die behoefte om uitheemse spesies wat aggressiewe indringers geword het, te vervang met minder aggressiewe, verkieslik inheemse spesies.

Veiligheidsomheiningplante word deur 47 foto's geïllustreer. Die inheemse spesies word beskryf en vir die vier hoofklimaatstreke van suidelike Afrika aanbeveel. Die voordele daarvan om twee of meer spesies met verskillende eienskappe in aanplantings te kombineer, word beklemtoon. 'n Lys van uitheemse spesies met die klimaatstreke waarin hulle in suidelike Afrika gekweek is of waarvoor hulle geskik is, word verskaf. Onkruid- en aggressiewe spesies word aangedui.

Introduction

Since early times, man has used plants to create physical barriers: as protection against wild animals and enemies; for shelter of dwellings, gardens, crops and livestock against injurious winds; to hide unsightly buildings or features of the environment; to provide privacy and for many other uses. Unfortunately, many of the stronger growing barrier plants have turned out to be veld invaders causing conservation problems. This survey of barrier plants in southern Africa was undertaken both to meet the growing demand for a variety of kinds of barrier plantings in different parts of the region and to provide suggestions of indigenous barrier species that can be used instead of invasive alien species.

Natural barriers of plants are frequently encountered in southern Africa, but the most impressive is that which occurs in the valley bushveld and coastal scrub of the eastern Cape. The bush at Addo and Uitenhage (Figure 1) for example, is tough, dense and spiny, averaging two to three metres in height. Animals have burrowed tunnels through the bush creating a maze which is truly formidable and which in the past claimed its toll of human lives.



FIGURE 1.—Valley Bushveld at Uitenhage: a man-made pathway provides access to an otherwise impenetrable natural barrier of tough, dense and spiny bush.

Veld types found to be particularly rich in plants with potential as security barriers, are: coastal forest and thornveld, lowveld, mixed bushveld and valley bushveld (after Acocks 1975). Within each of these veld types, natural barriers of plants were encountered.

A survey of the literature was conducted to determine the current knowledge. Most of this information concerns decorative hedges and windbreaks (Henderson 1983). References to security hedge plants used in southern Africa are few and scattered through the literature.

Field surveys were undertaken to identify species being used as barriers (but not recorded in the literature) and to investigate indigenous plants with as yet unidentified potential as barrier plants. These investigations were conducted in the early 1980's in the Transvaal, Natal, eastern Cape and northern Cape — mainly in bushveld, scrub and along forest margins. Apart from field notes which were compiled, photographs were taken and herbarium specimens and propagative material collected.

This study is therefore a compilation of already existing, but scattered, information on species used, as well as of potentially useful indigenous species that have not previously been used as barrier plants in southern Africa. While alien species feature prominently in the list of species already known as barrier plants, this survey indicates that there are numerous indigenous species suitable for barrier usage.

The performances of the suggested barrier plant species will vary greatly, depending on habitat and treatment, as well as on the genetic characteristics of the particular plants used. Performance studies could not be undertaken as part of the present study, but it is hoped that people using plants mentioned in the memoir, as well as other barrier plant species, will report back and so improve the fund of knowledge available.

Geographic regions and climatic zones

South Africa covers a wide range of climatic regions and it is therefore necessary to know the climatic requirements of species to be cultivated, and the climatic conditions under which they are to be grown. The maps depict-

ing the climatic zones (Figure 27, p. 43) and geographic regions (Figure 28, p. 44) have been used to define the climatic requirements and geographic distributions of the barrier plants recommended for use in this memoir.

The climatic zones delineated (Figure 27) are four very broad zones based on thermal and moisture regions in southern Africa. The map has been adapted from a silvicultural map of southern Africa by Poynton (1971). The moist zones range from subhumid to humid and have a moisture index greater than zero. The moisture index is an indication of how moist a climate is, taking into account both precipitation and potential evapotranspiration. The dry zones range from subhumid to semi-

arid and arid, and have a moisture index less than zero. The hot zones range from warmer-temperate to subtropical and tropical, and the approximate mean monthly minimum temperature for the coldest month is greater than 0°C. The incidence of frost ranges from light to none. The cold zones range from cooler-temperate to subalpine and the approximate mean monthly minimum temperature is less than 0°C. The incidence of frost ranges from moderate to very severe.

The map of geographic regions (Figure 28) has been adapted from the map used by the then Department of Forestry for advisory purposes in its series on guides to tree-planting in South Africa and South West Africa/Namibia (for example: Bands *et al.* 1973).

Indigenous security hedge plants

Introduction

Security hedge plants are used primarily as a means of preventing free passage of animals or people. In this context, they are commonly used to protect domesticated animals from intruders, as well as to contain them, particularly overnight. These plantings may also be used as part of the defence systems of specified areas, particularly of villages and military installations.

Most of the records of plants used for security purposes in South Africa are from Howes (1946), King (1951), Palgrave (1977), Palmer & Pitman (1972), and Sim (1919). Relevant information on security hedge plants in other African countries was located in the following papers: Allen (1909) — Zimbabwe (Rhodesia), Denyer (1978) — Nigeria and Zaire, Henkel (1923) — Zimbabwe (Rhodesia), Seignobos (1980) — Chad and northern Cameroon, Williamson (no date) — Malawi, and Willoughby (1918) — Zimbabwe (Rhodesia).

Seignobos (1980) describes in great detail the elaborate defence and enclosure systems created by the native people of Chad and northern Cameroon in pre-colonial times. Plantings of several different species were common — either as several rows, each of a different species, or two or more species combined in a single line of defence. Lines of defence were sometimes reinforced with low stone or mud walls, traps or ditches. Different categories of plants were used: thorny defensive plants, prop or support plants, poisonous plants, firebreak plants, magical plants and plants for the treatment of wounds.

Denyer (1978) refers to the ingenious defence system used on the plateau area in Nigeria. Complex entrance tunnels to villages were formed out of live *Euphorbia* hedges and planned on the principle of a maze. The tunnels were too narrow to allow a horse to turn around and the enemy could not break out without damaging the plants which then released a poisonous and very irritant latex.

Substantial information is also contained in Howes (1946) in which are described more than 100 species of spiny plants that have been used in the tropics as security hedges.

Combination plantings

Combination plantings of two or more different species in a single line of defence have been used by the native tribes of southern Africa (Figure 2) and north Africa (Seignobos 1980).

Most plants, with age, tend to open up underneath and become 'leggy' unless they are clipped frequently to encourage a dense branching pattern near ground level. In a garden hedge open gaps at the base are unattractive; in a security hedge they are not permissible and must either be prevented (by clipping or selection of a species that maintains ground density) or be filled in with low-growing plants, barbed wire or a stone wall, etc.

The combination of several species, each with different characteristics, can greatly increase the effectiveness of a barrier. For example the combination of thorny *Acacia* shrubs and poisonous *Euphorbia* species makes a formidable barrier. In Figure 3, *Acacia luederitzii* var. *retinens* is a sturdy framework while *Euphorbia grandicornis* is an irritant filler. The *Acacia* has hooked thorns (Figure 4) and the *Euphorbia* has straight thorns (Figure 5). An intruder cannot hack his way through for fear of being burned and blinded by the toxic *Euphorbia* latex. Even the slightest disturbance of the barrier will cause the *Acacia* thorns not only to hook or stab the intruder but to puncture the *Euphorbia* and release the toxic latex.

As described previously (Henderson 1983), four categories have been used to classify the species needed for mixed plantings: framework plants, short fillers, tall fillers and entanglers (Figure 6).

Characterization

The ideal characteristics for security hedge plants include the following:

- sturdy, woody or succulent shrubs or low-growing trees
- multi-stemmed from the base or low-branching; rigid or entangling branches; spreading crown; small, sparsely distributed leaves that will cast little shade

FIGURE 2.—A combination planting of *Euphorbia ingens* and *Agave americana* in Sekukuniland, southern Africa.



FIGURE 3.—A natural combination of *Acacia hederitzii* var. *retinens* (framework) and *Euphorbia grandicornis* (irritant and spiny filler).



FIGURE 4.—Inflated hooked thorns of *Acacia hederitzii* var. *retinens*.

FIGURE 5.—*Euphorbia grandicornis*. The spines are up to 70 mm long.

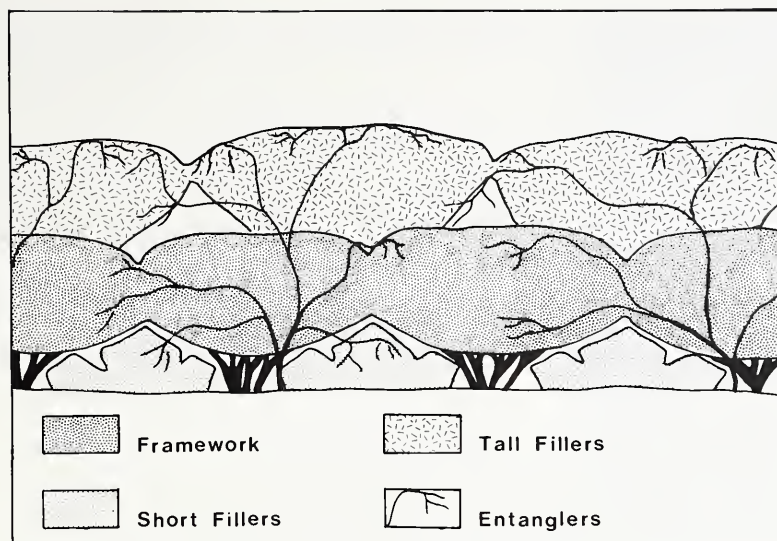


FIGURE 6.—A combination planting of framework plants, short fillers, tall fillers and entanglers.

- presence of spines, prickles or thorns
- irritant action through stinging hairs, latex or other means
- easy propagation and establishment by seed or vegetative means
- little attention or upkeep required after planting out
- ability to grow under a wide range of climatic and soil conditions
- rapid growth; longevity/permanence
- ability to withstand considerable root competition
- disease- and pest-resistant
- the ability to withstand fire, trampling and browsing
- capacity for regeneration if damaged
- non-invasive

Recommended species

The literature survey, computer search and field observations together yielded the names of 80 species already in use as security hedge plants in southern Africa. Of these, 41 (50%) are aliens, and eight of these species are declared weeds in South Africa.

As a result of the literature survey and field investigations, 105 taxa of indigenous plants have been identified as being potentially useful security hedge plants in South Africa, but only about ten of these have been used to any great extent.

One hundred and five indigenous taxa of plants recommended for trial in South Africa are given in Tables 1 & 2 (all tables from p. 45). Table 1 lists the botanical (according to Gibbs Russell *et al.* 1985 and Gibbs Russell *et al.* in prep.) and common names [according to the National Tree List (De Winter *et al.* 1978) unless specified], the climatic (Figure 27) and geographic (Figure 28) regions of occurrence and the barrier categories (Figure 6) into which each taxon falls.

Table 2 gives descriptive as well as miscellaneous information which includes the method of propagation, response to trimming, poisonous and irritant properties, and substrate, soil and moisture requirements. Additional information on each of the taxa listed in Tables 1 & 2 appears under Further notes on indigenous species on pp. 15–38.

The information presented is accurate within the limits of existing knowledge and has been extracted mainly from literature and specimen labels in the National Herbarium in Pretoria. Where there is uncertainty about any item this is followed by a question mark. None of the plants listed meets all the requirements set out for an ideal security hedge plant but the tables can be used to help select the most promising species for a particular set of circumstances.

Tables 3, 4, 5 and 6 list the most highly recommended species for each of the 4 major climatic regions. Table 3 includes recommended species for the hot and moist regions. All the framework species with the possible exception of *Phoenix reclinata*, *Entada spicata* and *Dovyalis rhamnoides* have been used as hedges. The first four species — *Carissa macrocarpa*, *Dovyalis caffra*, *Acacia ataxacantha* and *Flacourtia indica* have been fairly widely used as security hedges and have proved successful. All these species can be used on their own as security hedges. The best species i.e. those that maintain ground density the best, are marked with squares. The other species, except for *Phoenix reclinata*, tend to become scandent and open up underneath. This can be remedied by clipping or combining with a short filler or reinforcing with fencing, barbed wire etc..

Table 4 includes recommended species for the hot and dry regions. Two important factors in the selection of the best species were drought-resistance and resistance to browsing. All the *Euphorbia* spp. listed are browse-resistant. The species marked with asterisks have been

used successfully as stock-proof barriers but need protection when young. The species marked with plus signs are apparently not favoured by browsers (although they may be eaten occasionally). The species which maintain ground density the best have been marked with squares. The scandent species — *Acacia ataxacantha* and *Capparis* sp. will maintain ground density fairly well, provided there is no support available.

Table 5 includes recommended species for the cold and moist regions. Important factors in the selection of the best species were frost-resistance and previous use as a hedge. Of all the species, *Dovyalis caffra* maintains ground density the best. Ten of the 16 framework species have been used previously for hedging.

Table 6 includes recommended species for the cold and dry regions. Important factors in the selection of species were drought- and frost-resistance and previous use as a hedge. Ten of the 15 framework species have previously been used as hedges. The growth of most species is stunted under these harsh conditions and consequently they maintain ground density better than under more hospitable conditions.

Environmental effects

Climatic and other environmental factors, as well as the growth form under various conditions must be considered when choosing species suitable for security hedge plantings.

The cold interior (see Figure 27) of southern Africa is poorly endowed with indigenous woody plants, which is partly the reason for the almost exclusive use of alien (introduced) woody species in these regions.

Of the 105 indigenous taxa recommended for trial in southern Africa, only 17 are considered to have appreciable frost resistance and could be planted without protection in the very cold interior. A further 26 taxa are considered to have moderate frost resistance. Unfortunately the cold interior, which includes the Pretoria–Witwatersrand–Vereeniging complex, is the most densely populated and developed region in South Africa and accordingly has a great demand for hedging.

In contrast there are many potentially useful indigenous security hedge plants for the warmer regions of southern Africa and many of these have appreciable resistance to drought.

Unfavourable conditions such as exposure to wind, cold, drought, heat, fire and browsing by animals may cause plants to develop features which are desirable for a security hedge plant. These features include a decrease in size or stunted growth, increased branching from the base and formation of coppice shoots which often replace the main stem, an increase in succulence and other xerophytic characters in the foliage, and a development of thick bark and spinosity.

In a study of the growth forms of Natal plants, Bews (1917) observed that spinosity is generally associated with aridity and intense illumination, but there are

exceptions. Certain coastal forest species, *Scolopia zeyheri* and *Zanthoxylum capense*, for example, are very spiny. Also, a single species may show a certain variability of thorn development which does not seem to depend on aridity or intense illumination but is rather associated with new or vigorous growth. Young plants of *Acacia*, for example, are usually very thorny but become less so as they grow older. Frequently large thorns develop on coppice shoots whereas the rest of the plant may be unarmed. Some species may be thornless in the tree form but very thorny if kept cut as a hedge. A single species, even individuals of a single population, can exhibit a wide range of growth form under different environmental conditions.

The effect of the environment on growth form is an extremely important consideration when selecting the best species for a particular set of circumstances. A rigid, densely branching, spiny plant in a cold and arid environment will most likely become more open in appearance, taller growing and with larger leaves and fewer spines per unit length of stem in a less harsh environment. Such a plant may still be of use in the latter environment provided its growth form and impenetrability can be improved.

Ways of improving growth form and impenetrability

Trimming can improve growth form and impenetrability in the following way: it encourages the production of numerous and stout branches, rather than a few weak ones; it prevents the upper branches from growing out so wide as to shade out others, especially those near the ground; it encourages the production of young growth which is frequently the spiniest. Trimming is best for a neat security hedge and should be done frequently but lightly.

Provided their roots are well established, certain species will respond dramatically to a very severe cut or burn. *Acacia karroo* and *A. nigrescens*, for example, can produce a dense multi-stemmed thicket within a season or two. With species of a scandent habit, e.g. *Acacia schweinfurthii*, the trailing branches can be tied back or interlaced with one another from time to time in the required position. An impenetrable mass will develop as further growth takes place from these branches and only occasional trimming is required.

Plants can be laid horizontally on the ground as they are likely to send up a number of shoots from each prostrate stem resulting in an extra thick hedge. Finally, a barrier can be reinforced with barbed wire coils or fences, earth or stone walls or mounds, etc.

The protection of hedges against animals

Most young plants, with the exception of the poisonous *Euphorbia* spp., will need protection from animals. Double fencing would be most effective but is costly. Thorny, dead branches can be used in rural areas where there is a supply of thorn trees, but these are a temporary measure and will have to be replaced from time to time.

Plants set under the bottom wire of a single fence will be less liable to damage by stock than if planted to

one side of the fence. The plants are best not planted upright in the ground, but almost horizontally and pointing along the fence (Yeates 1942).

A stock-proof hedge can be relatively quickly established by planting truncheons of plants known to strike easily by this means e.g. *Commiphora* spp. The truncheons should be closely spaced or arranged at an angle so that they cross one another in a latticed fashion (Howes 1946).

Hedges can be made of poisonous plants such as certain *Euphorbia* spp., or can be protected by a row or two of these plants. The poisonous *Euphorbia* spp. could largely replace sisal (*Agave sisalana*) which has been used both widely and on a large scale. The young sisal plants are eaten by a wide variety of animals including elephants, kudu, baboons and porcupines (Figure 7). The poisonous *Euphorbia* spp. in contrast are eaten with impunity only by the black rhinoceros and are avoided by other animals, even goats, in overgrazed areas. The poisonous latex of the *Euphorbia* spp., however, renders the plants difficult and dangerous to handle and transport.

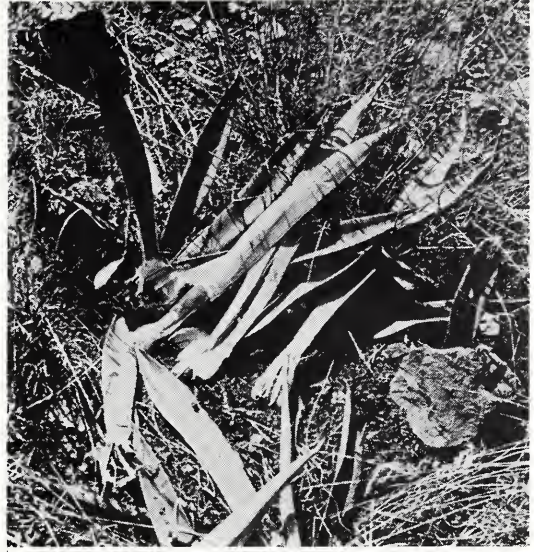


FIGURE 7.—Porcupine damage to *Agave sisalana*.

Other indigenous barrier plants

Garden hedge and windbreak plants

Introduction

Since garden hedges are often planted to provide some windbreak benefits, and windbreaks are often desired to be aesthetically pleasing, many of the species used are commonly used for both purposes. Garden hedges are primarily decorative barriers which may be clipped to form neat and attractive shapes. They are used to provide privacy and to partition areas within a garden. Windbreaks serve primarily to break the force of winds and provide shelter to people, animals and farmsteads (shelterbelts), and orchards or crops (windbreaks).

Important sources of information on indigenous and alien garden hedge plants are: Eliovson (1965), Haigh & Wilhelmij (1973), Harrison (1959), Keet *et al.* (1978), King (1951), Palgrave (1977), Palmer & Pitman (1972), Poynton (1972), Sim (1919), Smith (1966), Stapleton (1940), and Van der Spuy (1957).

Very few indigenous species appear to have been used as windbreak plants in South Africa. Only three of the 100 species cited by Van Rensburg (1973) are indigenous. Most of the records of the use of indigenous species are from Poynton (1972) and King (1951) — a total of 26 species.

The most important references to alien windbreak plants are: Poynton (1972), Van Rensburg (1973), and the then Department of Forestry guides to tree-planting in South Africa (Bands *et al.* 1973; Fenn *et al.* 1973, 1974; Haigh & Wilhelmij 1973; Keet *et al.* 1978; Van der Merwe *et al.* 1978; Van Rensburg 1975, and Wessels *et al.* 1978).

Characterization

The different requirements for garden hedges and windbreaks have necessitated the separate listing of the characteristics of plants suitable for these uses. For garden hedges, ideal characteristics include:

- woody or succulent shrubs or small trees
- multi-stemmed from the base or low-branching; dense evergreen foliage and closely arranged

branchlets; should not be too thorny or difficult to clip

- attractive foliage, flowers and fruit
- non-poisonous; non-irritant
- easy propagation and establishment by seed or vegetative means
- * reasonably rapid growth; longevity/permanence
- ability to withstand considerable root competition
- good response to trimming
- disease and pest-resistant
- non-invasive

Ideal characteristics of windbreaks/shelterbelts include:

- woody or succulent shrubs and trees
- strong trunks, low lateral branches and fairly dense, evergreen foliage
- a minimum height of 5 m in most cases
- easy propagation and establishment by seed or vegetative means
- rapid growth; longevity/permanence
- ability to withstand considerable root competition
- tolerance of wind, and in coastal areas, of salt-spray
- disease and pest-resistant
- non-invasive

Recommended species

One hundred and forty seven indigenous species of plants that have either been used or have potential as garden hedge and windbreak plants in southern Africa are given in Tables 7 & 8. Table 7 lists the botanical (according to Gibbs Russell *et al.* 1985 and Gibbs Russell *et al.* in prep.) and common names [according to the National Tree List (DeWinter *et al.* 1978) unless specified], the climatic (Figure 27) and geographic (Figure 28) regions of occurrence. The barrier categories (i.e. hedge or windbreak) to which each species is suited are indicated. A few species have been classified as screens since they do not fit strictly into either of the hedge or windbreak categories. They should be allowed to grow naturally without being cut back.

* A fast rate of growth is not always an advantage in the later life of the hedge, as rapidly-growing plants tend to open up underneath. Fast growth also almost automatically implies that frequent trimming will be needed.

Table 8 gives descriptive characteristics as well as miscellaneous information which includes method of propagation, response to trimming, poisonous and irritant properties, substrate, soil and moisture requirements. Additional information on each of the species listed in Tables 7 & 8 appears under Further notes on indigenous species on p. 15. Table 9 lists 45 species that have been described as good or excellent hedge and windbreak plants. Table 10 lists the most highly recommended species for the four climatic regions.

Road-island plants

Plants grown in road-islands often serve purely decorative purposes and are therefore of no concern in this study. However, many road-island plantings are used for screening purposes, particularly to visually separate traffic moving in opposite directions, such as on free-ways. Dense plant structures to provide a safety barrier (to absorb the impact of a collision) and to prevent the illegal passage of pedestrians across the road-island may

also be desirable. Ideal characteristics of road-island plants include:

- sturdy, woody or succulent shrubs
- multi-stemmed from the base or low-branching; dense evergreen foliage and closely arranged branchlets
- attractive foliage, flowers and fruit
- easy propagation and establishment by seed or vegetative means
- little attention or upkeep required after planting out
- ability to grow under a wide range of climatic and soil conditions and in particular to tolerate drought, frost, heat and poorly-drained soils
- rapid growth; longevity/permanence
- ability to withstand considerable root competition
- disease and pest-resistant
- non-invasive

A list is given in Table 11 of species which may be suitable for road-island plantings.

Alien barrier plants

As outlined previously (Henderson 1983), there is a general need to broaden the range of barrier plants available for various uses in different parts of the country. There is also a particular need to replace many of the alien species which have become invasive, threatening the pasture and tourist industries, and the indigenous flora (Henderson & Musil 1984; Stirton 1978).

Two hundred and eighty four species of alien plants have been used or recommended for use as barrier plants in southern Africa (security hedges — 31 species, garden hedges — 140 species and windbreaks — 182 species). Ninety two species (or 32% of the total) have shown weedy tendencies. Of these, 50 species are particularly aggressive invaders capable of suppressing and displacing indigenous vegetation. The remaining species are naturalized locally or have spread from plantations or occur in disturbed places. Eight of the alien species are declared weeds in South Africa in terms of the Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983) (Republic of South Africa 1984). These species are

Caesalpinia decapetala, *Cereus peruvianus*, *Hakea gibbosa*, *H. sericea*, *H. suaveolens*, *Lantana camara*, *Opuntia ficus-indica* and *Pereskia aculeata*. Other invasive species are: *Crataegus laevigata*, *Parkinsonia aculeata*, *Pinus halepensis*, *Prosopis glandulosa*, *Pyracantha angustifolia*, *P. coccinea* and *Rosa eglandaria*. The popularly used *Agave americana* and *A. sisalana* (Figure 8) spread locally, by suckering, from plantings.

Table 12 lists the scientific and common names of each of the 284 species, the major climatic zones (Figure 27) in which they have been grown or to which they are suited and the barrier category to which each species is suited. Declared weeds and invader plants (Republic of South Africa 1984), aggressive weeds, and other weeds of undisturbed and disturbed places are indicated.

The species listed in Table 10 are recommended for use instead of weedy aliens for each of the four climatic zones in southern Africa.



FIGURE 8.—*Agave sisalana*. A popular security hedge plant.

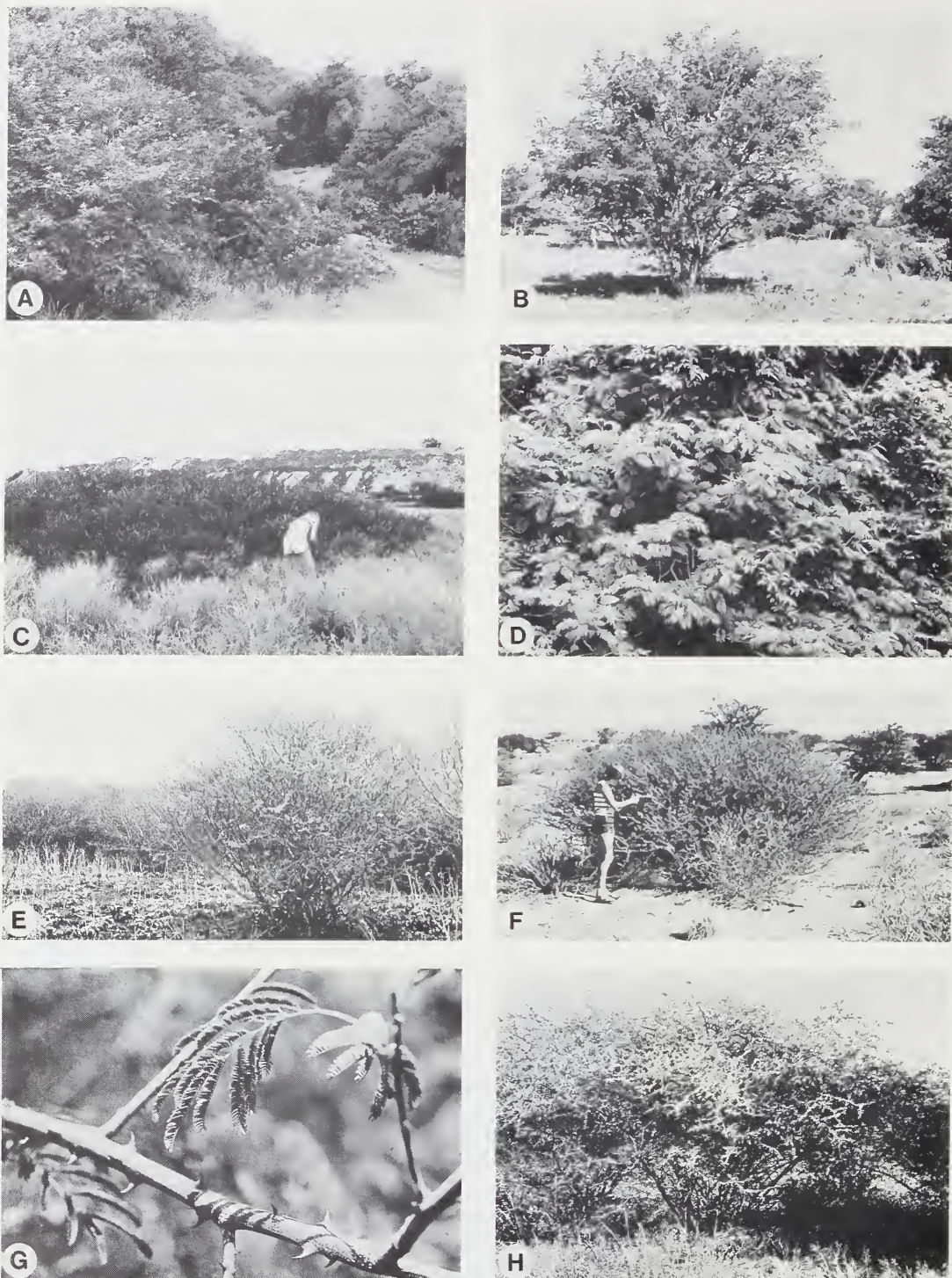


FIGURE 9.—A, *Acacia ataxacantha*. It can form impenetrable thickets in the high rainfall areas; B, *Acacia erubescens*. A multi-stemmed or low-branching, sturdy tree with sharp recurved thorns; C, *Acacia hebeclada* subsp. *hebeclada*. A dense, stoloniferous shrub that forms large spreading thickets; D, *Acacia kraussiana*. On its own it could make an attractive and dense security hedge; E, *Acacia luederitzii* var. *retinens*. A high potential framework plant. It is sturdy, multi-stemmed or low-branching with a dense, spreading and intensely thorny crown; F, *Acacia mellifera* subsp. *detinens*. A multi-stemmed, compact and very thorny shrub in the northern Cape; G, *Acacia schweinfurthii*. Its long, flexible and entangling stems are armed with scattered thorns; H, *Acacia senegal* var. *rostrata*. A potential framework plant. It is sturdy, multi-stemmed or low-branching with a flat, spreading crown of numerous interlacing branches and fine foliage which casts little shade.

Further notes on indigenous species listed in the tables

The following notes on indigenous species supplement the information in Tables 1–11 (pp. 45–85).

Acacia ataxacantha (Fabaceae)

A most attractive plant in flower and fruit. The flowering season may last several months. The thorns could be a disadvantage in a garden hedge. On its own it could make an excellent framework plant. In a combination planting its dense and scandent growth may smother other species. It is difficult to cut a path through, and coppices when damaged (D. Edwards pers. comm.). It can form impenetrable thickets (Figure 9A) and become a bad weed in high rainfall areas. Young plants require some time to become established, thereafter they grow rapidly (Carr 1976). It has been used as a living barricade around villages and kraals in Africa (Howes 1946; National Herbarium, Pretoria).

Acacia brevispica

Similar to *A. ataxacantha* but not as common, widespread or ornamental. Moderately fast-growing (Carr 1976).

Acacia davyi

A potentially useful plant for the cold highveld where, according to Carr (1976), it appears to be completely frost hardy. The rather straggly growth form may be improved by clipping. Fast-growing (Carr 1976).

Acacia erubescens

Could make a very strong framework. Multi-stemmed (often with the stems close together (Figure 9B)) or single-stemmed with low branching and a spreading crown. The branches are rigid, strong and equipped with hard and vicious thorns. It produces little dead material and is a low fire risk (D. Edwards pers. comm.). Growth on the highveld is very slow (Carr 1976) but should be considerably faster in the warmer regions. A declared invader plant in the Cape and Transvaal.

Acacia exuvialis

Can form impenetrable thickets and is moderately frost-hardy. A potentially useful plant for the colder regions. Moderately fast-growing (Carr 1976).

Acacia fleckii

Closely resembles *A. erubescens*. A sturdy, usually

multi-stemmed shrub or low-branching tree with a dense, spreading crown. Fast-growing (Carr 1976). A declared invader plant in the Cape.

Acacia grandicornuta

A sturdy, heavily armed, low-branching tree with a dense, rounded crown. It has distinctive ascending branches and maintains ground density well. Grows very thickly and is difficult to penetrate. Moderately fast-growing (Carr 1976).

Acacia hebeclada subsp. *hebeclada*

A low-growing, stoloniferous shrub (Figure 9C). Large, spreading thickets up to 15 m in diameter may be formed. The subterranean stems are protected from any above-ground mechanical, frost or fire damage and respond by producing aerial shoots. Spreading thickets are encouraged by overgrazing. Slow-growing (Carr 1976). Leaves and immature pods contain large quantities of prussic acid and are occasionally poisonous to stock and game (National Herbarium, Pretoria; Palmer & Pitman 1972). A declared invader plant in the Cape and Transvaal.

Acacia karroo

Produces an outstanding display of yellow flowers which have a strong and sweet fragrance. A good source of honey and attractive to bees (Anderson *et al.* 1973). It flowers on and off throughout the summer season whenever it 'smells' rain. Thorns could be a disadvantage in a garden hedge. One of the most widespread and adaptable woody species in southern Africa. A very variable species and care must be taken in selecting a suitable form. A dense, multi-stemmed, shrubby growth form should be obtainable by cutting or clipping. It coppices vigorously if chopped or cut back by frost or fire (Carr 1976; Ross 1975). Often thicket-forming and difficult to eradicate from agricultural land; it is a declared invader plant in South Africa. Fast-growing during its early years but slowing down later (Carr 1976). Has been used as a living barricade around kraals, but more often the dead, spiny branches have been placed around kraals and cultivated lands.

Acacia kraussiana

On its own it could make an attractive and dense security hedge, especially for the coastal belt (Figure

9D). It could be used most effectively over a wall or fence and should be fast-growing in its natural habitat.

Acacia luederitzii var. *retinens*

A potentially very useful framework plant for the dry regions. Usually a sturdy, multi-stemmed or low-branching shrub with a dense, spreading crown (Figure 9E). The crown may trail down to ground level forming an impenetrable tangle and barring access to the main stems (Carr 1976). The hooked thorns are vicious and very effective (Figure 4). Not browsed in the Mkuze Game Reserve (P. Goodman pers. comm.). Utilization by browsers has not been observed in the Kruger National Park (Van Wyk, P. 1972). It can spread at the expense of grazing land. Growth on the highveld is slow (Carr 1976) but should be considerably faster in warmer regions.

Acacia mellifera subsp. *detinens*

Often a many-stemmed, compact shrub particularly in the northern Cape (Figure 9F) or a small tree which is usually several-stemmed. It is robust, has a spreading crown which is densely branching, rigid and intensely thorny. Masses of fragrant, creamy flowers are produced in spring before it comes into leaf. Known as a honey plant in the northern Cape (Anderson *et al.* 1973). Spreads rapidly from seed and vegetatively from coppice buds which are situated at or below soil level. It produces masses of shallow, spreading roots which preclude the growth of other perennials (A. Gubb pers. comm.). It has become a pest plant in parts of the country where it has spread almost to the exclusion of other species and is a declared invader plant in the Cape and Transvaal. Growth on the highveld is slow (Carr 1976). It has been used for security hedging in southern Africa (D.S. Hardy pers. comm.).

Acacia nigrescens

A potential tall filler. It is usually a tall, single-stemmed, high-branching tree with a rather open crown. The leaves are small and deciduous. A denser basal growth should be obtained by burning or clipping. It is not easily killed by fire and trees burned to the ground thereafter form multi-stemmed thickets (Van Wyk, P. 1972). Masses of creamy-coloured, scented flowers are produced in August/September for several weeks before it comes into leaf. Slow growing (Palmer & Pitman 1972). It is a declared invader plant in the Transvaal.

Acacia schweinfurthii

On its own it can form dense thickets 3 to 4 m high which resemble cultivated, but untrimmed, hedges (Carr 1976). The fresh green leaves contribute to making this an attractive hedge. There is little secondary branching, the stems are flexible, very entangling and armed with scattered thorns (Figure 9G). It has been used for security hedging in southern Africa and is best used on its own, for it opens up underneath when it has some support and will smother other non-scandent species. The thorny twigs and leaves are not browsed by any animal in its natural habitat, and it can become a forest weed (Von Breitenbach 1965). Fast-growing, even on the highveld in a sheltered position (Carr 1976).

Acacia senegal var. *rostrata*

Could make an excellent framework plant. It is sturdy,

multi-stemmed or low-branching with a flat, spreading crown of numerous interlacing branches and fine foliage which casts little shade (Figure 9H). The thorns are arranged in threes like *A. senegal* var. *leiorhachis* and are extremely effective. Can spread and form impenetrable thickets and is a declared invader plant in the Cape and Natal. It has been used for security hedging in southern Africa (D.S. Hardy pers. comm.). Growth is slow on the highveld (Carr 1976) but should be considerably faster in the warmer regions. Produces an abundance of seed (Van Wyk, P. 1972).

Acacia senegal var. *leiorhachis*

A potential tall filler. It has one to a few stems which give rise to a very sparse and slender crown (Figure 10) which casts little shade in summer and winter (deciduous). The thorns are most effective, occurring in threes, the middle thorn hooked downwards and the side thorns upwards. Game animals have not been observed to utilize this tree in the Kruger National Park (Van Wyk, P. 1972). It can grow on exceptionally dry, rugged and stony terrain with shallow soil. Usually flowers under moisture stress and produces very little seed (Van Wyk, P. 1972). Growth on the highveld is slow but should be considerably faster in the warmer regions (Carr 1976).



FIGURE 10.—*Acacia senegal* var. *leiorhachis*. A potential tall filler.

Acacia tortilis subsp. *heteracantha*

Best used as a framework plant in the arid, shallow-soiled regions where its growth is stunted and it remains shrubby in growth form. A denser basal growth should

be encouraged by cutting or clipping since it coppices vigorously if damaged. The thorns are of two kinds — straight and hooked — and are very effective. There have been some unconfirmed allegations that the foliage can become toxic to domestic livestock (National Academy of Sciences 1979). Young plants are damaged by frost and require protection (National Academy of Sciences 1979). Slow-growing (Carr 1976; Poynton 1972) but plants frosted back can grow 1 m in a season (Carr 1976). It spreads in overgrazed land and in shallow, stony soils it develops long, lateral roots which can become a nuisance in nearby fields, paths and roadways (National Academy of Sciences 1979). It is a declared invader plant in the Cape, Natal and Transvaal. It is quite likely that it has been used, like *A. karroo*, as a barricade around kraals and cultivated lands.

Adenium multiflorum (= *A. obesum*) (Apocynaceae)

A very showy plant in flower which has potential as an ornamental low border or hedge. In winter and early spring it bears clusters of 5-petalled flowers of white, beautifully coloured about the edge with pink or red. It has a toxic latex that has been used as a fish and arrow poison (Watt & Breyer-Brandwijk 1962) and has been suspected of causing stock poisoning (National Herbarium, Pretoria). There have apparently been no cases of human poisoning, but the plant should be regarded as potentially dangerous.

Agathosma crenulata (Rutaceae)

This is one of three *Agathosma* spp. used for the production of the medicinal drug, buchu. The leaves are aromatic and the flowering season lasts from mid-winter to early summer. It has been used as a garden hedge in South Africa (National Herbarium, Pretoria) and could be used for low, formally clipped hedges, like the 'box' hedges of Europe.

Aloe arborescens (Liliaceae)

A strikingly beautiful plant in flower. The flowers are arranged in conical heads and range in colour from red and scarlet to yellow. A good source of pollen and nectar, attractive to both bees and birds. It can make a most attractive, neat, compact and evergreen hedge which requires little or no attention once established (Figure 11). It maintains ground density extremely well. It is fast-growing (D.S. Hardy pers. comm.) and has frequently been used as a hedge around kraals, particularly in the Transkei (Palmer & Pitman 1972). It has no thorns and offers little resistance to a person armed with an axe or panga.

Aloe castanea

A potentially useful informal hedge plant. It has a most attractive growth form, usually branching near the base or higher, sometimes rebranching and producing 10 to 20 crowns. Individual flower-buds are reddish-brown and the open flowers are yellow. Overall, the inflorescence appears chestnut-coloured — *castanea*. Bees collect the pollen while birds are attracted to the nectar.

Andrachne ovalis (Euphorbiaceae)

The root is said to be poisonous and the leaves smell of prussic acid when wilted (National Herbarium, Pretoria). A decoction of the root has been used as an



FIGURE 11.—*Aloe arborescens*. It can make a most attractive, evergreen, neat and compact hedge.

anthelmintic in man and animals by the Swati (Watt & Breyer-Brandwijk 1962). It has been cultivated as a low border (Stapleton 1940).

Apodytes dimidiata (Icacinaeae)

The white flowers have a heavy, sweet scent and are borne abundantly in sprays up to 110 × 80 mm. The fruit is a black drupe with a red heel or aril. According to Palmer & Pitman (1972) it makes a graceful garden tree and could make a handsome hedge in the cold districts.

Azima tetraacantha (Salvadoraceae)

A potentially useful consolidation plant because of its scandent growth habit. On its own it tends to open up underneath and in the middle because of its drooping nature. This might be remedied by clipping since it coppices vigorously when cut and spreads with the aid of underground runners. It could be used as a short filler on the edge of a barrier especially if it is clipped. It can spread and form dense thickets in overgrazed areas. A prick from the needle-sharp spines (Figure 12) causes an unpleasant burning sensation (Palgrave 1977) and sometimes an allergic reaction (Van Wyk, P. 1972). Stems lack strength, older stems are spineless and the spines, though irritant, are not strong and break away easily from the stem. The young shoots are the spiniest.

Balanites maughamii (Balanitaceae)

A potential tall filler. A tree with an open crown which casts moderate shade in summer and very light shade in winter (deciduous). The branches are armed with

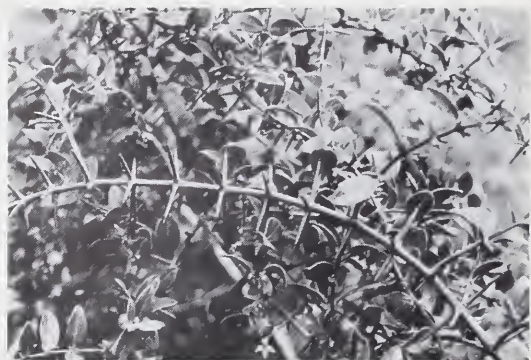


FIGURE 12.—*Azima tetracantha*. Four needle-sharp spines occur at each pair of leaves.

strong, vicious, forked spines. Slow-growing (Van Wyk, P. 1972), often on poorly-drained sites such as floodplains and waterlogged soils. The fruits are poisonous to certain aquatic organisms without lungs, e.g. the bilharzia snails (Van Wyk, P. 1972).

Bauhinia galpinii (Fabaceae)

This species is an extremely beautiful flowering shrub. The salmon/red flowers are borne in large, branched sprays up to 200 mm in diameter. It can be grown as an informal hedge or screen and has been used successfully as an ornamental road-island screen in the warmer parts of the Transvaal. It is fast-growing, about 1 m or more per annum (Poynton 1972) and will start flowering at the end of its second year (Von Breitenbach 1965). It can be grown in most places except where frosts are very severe. Aerial parts are sometimes killed or defoliated by heavy frosts and may need to be cut back in winter. It should be grown in well drained soil.

Bauhinia tomentosa

A beautiful flowering shrub but not as showy as *B. galpinii*. One to three of the petals, which are yellow, have a dark maroon patch at the base. It can be grown as an informal hedge.

Bequaertiodendron magalismontanum (Sapotaceae)

This species produces one of South Africa's best wild fruits (the 'stamvrug') — the fruit is a red, edible berry, with a high vitamin C content (Palmer & Pitman 1972) and a sweet, but rather astringent flavour. It has been used to make wine, brandy, syrup and jelly (Palmer & Pitman 1972). It usually grows as a compact, low-growing and densely leafy shrub. It makes a decorative garden shrub and has potential as an informal hedge. The leaves are decorative, silvery to dark green above, their lower surface covered with golden hairs. According to P. van Wyk (1974) the leaves are seldom eaten by wild animals.

Brabejum stellatifolium (Proteaceae)

This is the wild almond planted as a hedge at the foot of Table Mountain by Jan van Riebeeck. It makes an excellent broad hedge where it has room to spread (Eliovson 1965). The white, scented flowers provide a

splendid show in early summer. The seed, which can liberate prussic acid (Steyn 1934) is poisonous unless well soaked (Palmer & Pitman 1972). It should not be planted near bee-hives as its honey is most unpalatable (Anderson *et al.* 1973).

Brachylaena discolor (Asteraceae)

This species makes a good trimmed hedge (Palmer & Pitman 1972) and has been used for low shelterbelts and rough hedges in situations exposed to sea winds (King 1951). It is fast-growing (Palgrave 1977). The leaves are decorative, dark green above with their lower surfaces silvery white, and are so intensely bitter as to be unpalatable, yet they are occasionally browsed by eland (National Herbarium, Pretoria).

Brachylaena neriifolia

This species should prove satisfactory as a shelterbelt as well as a tall hedge. The leaves are too large for a closely trimmed hedge (Matthews no date).

Buddleja auriculata (Loganiaceae)

A moisture-loving, appreciably frost-hardy species that often branches from ground level and is neat, shapely and luxuriant. It makes a good garden shrub or tree and has potential as a decorative hedge. It stands clipping well (Palmer & Pitman 1972). The flowers occur in attractive terminal heads in late autumn or winter and are strongly and deliciously scented. It blooms just before *Buddleja salviifolia* and a garden with both species is assured of a long season of colour and scent (Palmer & Pitman 1972).

Buddleja salviifolia

This must be one of the most deliciously perfumed of all plant species. The flowers are produced in late winter or early spring and their delicate, enticing scent wafts for great distances. It is fast-growing (Palgrave 1977; Yeates 1942), but tends to become bare near the ground if not kept bushy when young by trimming. It is well suited as a rough hedge and shelter in places where rapid shelter is needed in windy situations (Yeates 1942).

Burchellia bubalina (Rubiaceae)

This species makes a lovely garden shrub and a handsome hedge (Keet *et al.* 1978). The glossy green leaves are attractive at all seasons and contrast well with the red flowers. The main blooming season is spring and summer but flowers appear on and off for most of the year, sometimes a heavy crop appearing in autumn (Palmer & Pitman 1972). The sweet nectar in the flowers attracts many species of birds (Palmer & Pitman 1972).

Buxus macowanii (Buxaceae)

A decorative, evergreen species that grows on a wide variety of soils. It forms an excellent, low formal hedge (King 1951). It is slow-growing (Palmer & Pitman 1972).

Caesalpinia bonduc (Fabaceae)

A thorny, scrambling shrub or climber that could be useful in the consolidation of a barrier. The thorns do not appear to be very effective. It could be used to cover a fence or wall and has been cultivated in India as a security hedge (Howes 1946).

Canthium obovatum (Rubiaceae)

This species has been cultivated as a garden hedge and a street ornamental (National Herbarium, Pretoria) and has been valuable in consolidating sand dunes (Palgrave 1977). The glossy foliage is attractive and the small fruit is popular with birds.

Capparis fascicularis (Capparaceae)

Has potential as an entangler since in its natural habitat it frequently scrambles over bushes and trees. It has small leaves which cast little to moderate shade and it is armed with effective, though small, thorns.

Capparis sepiaria

A spreading, much branched and robust plant that has potential as a framework plant. It is more compact in habit than most *Capparis* spp. and needs only occasional trimming (Howes 1946). It could perhaps be used as an entangler but may smother the framework plants. It could be useful as a fence scrambler and has been grown as a hedge around villages in India (Howes 1946). It is little browsed perhaps because of its spines (Palmer & Pitman 1972). Like other *Capparis* spp., its spines are vicious, occur in pairs flanking each leaf and are hooked sharply downwards.

Capparis tomentosa

On its own it could make an excellent framework plant (Figure 13A). Where there is support available, it tends to scramble and open up underneath. In a combination planting it is likely to shade out and smother non-scandent species. It could be used effectively as a fence reinforcer and has been used in southern Africa for security hedging (P. Goodman pers. comm.). Reputed to be poisonous to stock and yet to also provide palatable grazing for cattle (National Herbarium, Pretoria; Palgrave 1977). The flowers are large and very showy. The fruits are popular with vervet monkeys and are sometimes eaten by children (Palmer & Pitman 1972).

Carissa bispinosa var. *bispinosa* (Apocynaceae)

A small, rigid, densely-branching, very thorny shrub which remains dense at the base and does not open up with age. The spines are hard and stout and once- or twice-forked. Slow-growing (King 1951), makes an excellent, low, formal hedge suited to the dry regions. It is tougher and more compact than *C. bispinosa* var. *acuminata* which is best suited to the coastal belt and mist belt of the eastern Transvaal and Natal.

Carissa haematocarpa

A much branched, robust, extremely dense, twiggy and thorny plant that maintains ground density. It could make a sturdy short filler, provided it receives sufficient sunlight. It tolerates drier conditions than *C. bispinosa* var. *bispinosa*. Very slow-growing (Palmer & Pitman 1972); it could make an excellent low hedge in the dry regions (King 1951). It is likely that it can be propagated from seed and cuttings like *C. bispinosa* var. *bispinosa* and *C. macrocarpa*.

Carissa macrocarpa (= *C. grandiflora*)

The ideal security hedge plant for the coastal belt; also suited to the escarpment of the eastern Transvaal. It is naturally bushy right to the base, sturdy, has a dense

close habit and formidable thorns (Figure 13B). It can be grown in full sun or in the shade of other plants. It is very fire-resistant and is difficult to cut through (D. Edwards pers. comm.). It is easily propagated from seed, cuttings, suckers and layers (Palmer & Pitman 1972; Von Breitenbach 1965) and grows rapidly under suitable conditions (Palgrave 1977). The white, starlike flowers (Figure 13C) are sweetly scented and most attractive against the dark green foliage. The fruit is an attractive red berry; it is edible, succulent, rich in vitamin C, calcium, magnesium and phosphorus, and makes an excellent preserve (Palmer & Pitman 1972). This species is widely cultivated as an ornamental shrub, hedge and windbreak, not only in southern Africa, but in many parts of the world (Howes 1946).

Carissa tetramera

A potential low, formal hedge, similar to *C. bispinosa* var. *bispinosa*. A compact, densely branching shrub with hard stems and thorns; it maintains ground density. It can probably be propagated from seed or cuttings.

Cassine reticulata (Celastraceae)

A stiff-leaved, evergreen shrub that has potential as a garden hedge. The young leaves are attractive, bright red turning dark green.

Cassinopsis ilicifolia (Icacinales)

A multi-stemmed, densely branching and heavily armed shrub in well-lit situations. It tolerates shade but then becomes lax with long, drooping, flexible branches. The young branches are armed with single, slender, very sharp spines. It is slow-growing (Palmer & Pitman 1972) and is a potential evergreen garden hedge plant for the moderately cold regions.

Cassinopsis tinifolia

A potential garden hedge; the leaves are glossy dark green above and paler below.

Catunaregam spinosa (= *Xeromphis obovata*) (Rubiaceae)

Frequently multi-stemmed, sturdy and spiny (Figure 13D). A potential framework plant which often grows in thickets.

Chaetachme aristata (Ulmaceae)

Has potential as a framework plant particularly in the moist, wooded regions. A denser growth habit should be obtainable by clipping. The wood is hard and tough, and resists axe and bulldozer (Palmer & Pitman 1972).

Chrysanthemoides monilifera (Asteraceae)

A spreading bush with slightly fleshy leaves and bright yellow, daisy-like flowers. It has been used as a garden hedge and windbreak (Palgrave 1977) and for driftsand stabilization (Fenn *et al.* 1973). It is known as boneseed in Australasia where it has become a pest. Caution should be exercised before planting it outside southern Africa.

Coddia rudis (= *Xeromphis rudis*) (Rubiaceae)

This species is usually an evergreen, multi-stemmed, much branched low shrub. It is often heavily browsed by cattle and goats, and the typical pyramid-shaped browse



FIGURE 13A.—*Capparis tomentosa*. A scrambling, very thorny species that could be used most effectively on its own.



FIGURE 13B.—*Carissa macrocarpa*. The forked spines are hard and sharp-pointed.



FIGURE 13C.—*Carissa macrocarpa*. The white flowers are sweetly scented and attractive against the dark green foliage.



FIGURE 13D.—*Catunaregam spinosa*. The branches are armed with hard and sharp-pointed, woody spines.

form of the shrub is good evidence that it reacts well to clipping (M.J. Wells pers. comm.). The leaves are attractive in most seasons.

Coleonema album (Rutaceae)

A much-branched shrub with aromatic leaves. It has been used as an unclipped hedge in the Cape (Eliovson 1965) and it makes a good internal or dividing hedge up to 1,5 m (Matthews no date).

Commiphora africana (Burseraceae)

A useful framework or short filler plant for the very dry regions. It is usually multi-stemmed with stout, woody spines and rigid branches in all directions. It grows easily in deep sand as well as shallow, stony soil and is easily propagated from seed and truncheons. It has been used as a security hedge plant in Chad, northern Cameroon (Seignobos 1980) and northern Nigeria (Howes 1946) where it forms an efficient barrier, especially when grown from truncheons. It is not considered poisonous by Watt & Breyer-Brandwijk (1962), although it is the host to one of the 'poison grubs' (*Diamphidia* sp.), from which Bushmen make their arrow poison. This particular grub feeds exclusively on *C. africana* (Palmer & Pitman 1972). No references to the foliage being browsed by stock and game have been found. The roots are eaten by elephants and porcupines.

Commiphora glandulosa

Usually a high-branching, single-stemmed thorny tree. Its usefulness lies in the fact that it is easily propagated from truncheons, is considerably drought resistant and is little used by animals. An effective barrier could be formed by planting well grown truncheons at an angle so as to form a mesh of interlocking branches. It is moderately fast-growing (Van Wyk, P. 1972) and has often been planted as a living fence (National Herbarium, Pretoria). Reputed to be poisonous (Watt & Breyer-Brandwijk 1962). In the Kruger National Park, elephants have occasionally been seen eating leaves and young shoots, while warthogs have been seen digging up the roots (Van Wyk, P. 1972).

Commiphora pyracanthoides

Usually a multi-stemmed, low, spreading spiny shrub

which maintains ground density (Figure 14A & B). It is a useful plant for the very arid regions, but may form thickets. Its roots are deep and have a high water content which enables it to survive the severest droughts (National Herbarium, Pretoria; northern Transvaal farmer pers. comm.). It is easily propagated from seed and truncheons and has been used as a security hedge around kraals and cultivated lands in Venda and Sekukuniland (National Herbarium). It is a declared invader plant in Natal and the Transvaal. The berry is said to produce a stinging sensation in the mouth followed, after some days, by swelling and burning of the lips (Watt & Breyer-Brandwijk 1962). The root and gum are edible (National Herbarium). A prick from the spine may cause intense stinging of the skin (Mitchell & Rook 1979; northern Transvaal farmer pers. comm.). It is browsed by stock and game although one report states that it is avoided by browsers (National Herbarium).

Commiphora schimperi

Usually a single-stemmed, high-branching thorny tree that can be planted as truncheons to form a security hedge. Moderately fast-growing (Van Wyk, P. 1972); it has been grown as a live fence in South Africa (National Herbarium, Pretoria).

Commiphora woodii

Usually a single-stemmed, high-branching unarmed tree that can be planted as truncheons to form a security hedge. It has been grown as a live fence in South Africa (Von Breitenbach 1965).

Crotalaria capensis (Fabaceae)

This was one of the first South African species to be known to European gardeners and was cultivated in Vienna 200 years ago (Palmer & Pitman 1972). It has been planted as a hedge in South Africa (National Herbarium, Pretoria; Palgrave 1977; Palmer & Pitman 1972) and it is very colourful in the flowering season. The flowers are produced in summer and autumn in showy, pendulous sprays. The nectar is attractive to birds. The fruit is an inflated, cylindrical pod, which when dry, rattles in the wind. Where frosts are severe, it should be planted in a warm position, but it shoots up if frosted back (Eliovson 1965). In certain areas it is



FIGURE 14.—*Commiphora pyracanthoides*. A, typical multi-stemmed form on deep sand; B, single-stemmed form on rocky terrain.



FIGURE 15.—*Dalbergia armata*. It is usually a scrambling shrub or strong climber with long, entangling stems.

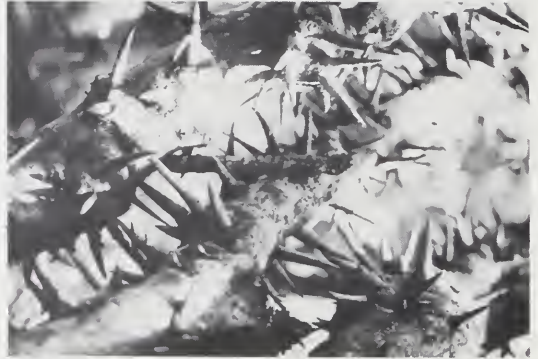


FIGURE 16.—*Dalbergia armata*. The woody spines are hard and stout.



FIGURE 18.—*Dovyalis caffra*. With or without trimming it forms an impenetrable, dense hedge.



FIGURE 17.—*Dichrostachys cinerea* subsp. *africana*. A potential framework plant. It can, however, spread and become a serious pest in thicket form and is difficult to eradicate.



FIGURE 19.—*Dovyalis rhamnoides*. Sturdy and very spiny in well-lit situations.

reported to be poisonous to stock, but this may be due to confusion with another species, *C. burkeana*, which causes stiff-sickness in cattle (Palgrave 1977).

Curtisia dentata (Cornaceae)

A tall, fast-growing species in moist, forest conditions (Von Breitenbach 1965). In sunlight it tends to become bushy and could make a fine, tall, leafy hedge (Palmer & Pitman 1972).

Dalbergia armata (Fabaceae)

A potential entangler. It is usually a scrambling shrub or strong climber with long, entangling stems (Figure 15). The spines are hard and stout (Figure 16) but less effective in hooking than the sharp, hooked thorns of the *Acacia* and *Capparis* spp. The tiny flowers are grouped into clusters 100 mm long and when borne in profusion make a most attractive sight. As an entangler, it may become very dense and shade out other plants. It could be useful as a fence reinforcer.

Dichrostachys cinerea subsp. *africana* (Fabaceae)

It is very often a sturdy, multi-stemmed shrub (Figure 17) that maintains ground density and is armed with hard, stout spines. Not as densely branching as many of the *Acacia* spp. listed. Branches are flexible and tend to become very long with little secondary branching. It thrives in a wide range of climatic and soil conditions and is easily propagated from seed and grows quickly (Cunliff 1963). It has been used for security purposes in southern Africa (D. Edwards pers. comm.) but can become a serious pest in thicket form and is difficult to eradicate (Palmer & Pitman 1972). It is a declared invader plant in the Cape and Transvaal.

Diospyros austro-africana (Ebenaceae)

A much branched shrub or small tree growing in a wide variety of habitats. It is deciduous on the Witwatersrand (Tree Society of Southern Africa 1964) but likely to retain its leaves at the coast and in other, less harsh climates. It has potential as a low border (Stapleton 1940).

Diospyros dichrophylla

Usually a neat, rounded, multi-stemmed, evergreen bush. According to Palmer & Pitman (1972) it was cultivated in the gardens of the Dutch East India Company at the Cape in 1815 and was known in the gardens of Europe even earlier. It is still used for hedges on St Helena where it was introduced perhaps in the 18th century. The fruits are said to be poisonous (Palgrave 1977; Palmer & Pitman 1972).

Diospyros lycioides

A widespread, adaptable, hardy and attractive species. The foliage is usually deciduous, a unique bluish-green to dark green with beautiful autumn shades. The red fruits, up to 20 mm long, are very showy and can be produced in abundance. They are edible and sweet-tasting, but together with the leaves are said to be mildly poisonous on occasions (Palmer & Pitman 1972). The flowers are a good source of honey and are attractive to bees (Anderson *et al.* 1973). It should make a good hedge (National Herbarium, Pretoria) and serves as an effective windbreak (Dry 1970). It needs only the

very minimum of water and care and grows extremely fast in cultivation (Dry 1970).

Diospyros whyteana

This species makes an excellent garden tree and an outstanding hedge. It was popular in the gardens of Europe nearly 300 years ago (Palmer & Pitman 1972). It is small and compact with ornamental, glossy, dark green, evergreen foliage. It is moderately fast-growing (Palgrave 1977; Von Breitenbach 1965), hardy, undemanding as to soil, thrives in shade and full sun and stands clipping (Palmer & Pitman 1972).

Dodonaea angustifolia (= *D. viscosa*) (Sapindaceae)

A proven, drought-resistant hedge plant (King 1951; Palmer & Pitman 1972 and many others). It is one of the few indigenous species to have been cultivated from early times and has been used in various parts of the world to bind sand or reclaim marshes (Palmer & Pitman 1972). The leaves secrete a gummy, sticky substance which makes them shine and which appears to make them unpalatable to browsers. It is moderately fast-growing (Poynton 1972).

Dovyalis caffra (Flacourtiaceae)

An excellent security hedge plant that can be used throughout the country except where frosts are severe; it has been described as 'one of the most useful hedge plants for the subtropics' (Howes 1946). It also makes an excellent shelterbelt (Van der Merwe *et al.* 1978) and could be planted for its fruit and nectar production alone (Poynton 1972). It is multi-stemmed, very sturdy and dense, with strong branches bearing stout thorns. It maintains ground density and, with or without trimming, it forms an impenetrable, dense hedge (Figure 18). It is easily raised from seed (D.S. Hardy pers. comm.) but does not strike readily from cuttings (Howes 1946). Growth is at first slow but soon increases. It can reach 2.5 m in 3 years (Howes 1946). The fruit is a berry the size of an apricot and has an acid flavour. It is used to make jam and marmalade, and can also make an excellent cattle fodder (Van der Merwe *et al.* 1978).

Dovyalis rhamnoides

A potential framework plant particularly for the coastal belt. In well lit situations it is sturdy, spiny (Figure 19) and maintains ground density. Similar to *D. caffra* but is unlikely to tolerate drought and frost. It is difficult to cultivate, cuttings do not strike readily and seed, which is produced sporadically in small quantities, soon loses its viability (Von Breitenbach 1965). The fruits are pleasantly acid-flavoured and much sought after to make excellent jellies and preserves (Palgrave 1977; Palmer & Pitman 1972).

Dovyalis zeyheri

A potential framework plant for the Transvaal Highveld. It is not as densely bushy as *D. caffra* and is more frequently a tree. Clipping should help to thicken the plant growth at the base. It is more difficult to cultivate from seed than *D. caffra*, but seed is often produced in large quantities (D.S. Hardy pers. comm.). Recommended by Smith (1966) for making security hedges. The fruits are pleasantly flavoured, although sometimes sour, but make a good jelly (Palgrave 1977).

The occasional foetid smell (Palgrave 1977; Palmer & Pitman 1972; National Herbarium, Pretoria) omitted by the plant would make it unsuitable for use in parks, gardens or in any close proximity to people.

Duvernoia adhatodoides (Acanthaceae)

This species has been in cultivation for a very long time, yet few gardens possess it today (Obermeyer 1962). It is a most attractive evergreen tree or shrub that makes an excellent hedge in moist, frostless areas near the sea (King 1951). The flowers are showy, ranging from white to mauve and beautifully marked with purple in the throat. They are densely crowded into spikes up to 150 mm long. The fruit is a capsule which dehisces explosively with a loud crack, hence the name pistol bush.

Ehretia rigida (Boraginaceae)

Usually a multi-stemmed, rigid and twiggy shrub. The drooping branches of some forms are reminiscent of the weeping mulberry. Other forms are very tangled, giving rise to the name 'deurmekaarbos'. Its adaptability to a wide range of soil and climatic conditions make it a potentially useful plant, especially as a garden hedge (Eliovson 1965). It suckers and can form dense thickets. It is unarmed, fast-growing and flowers young (Skinner (1980). Essentially evergreen, the leaves fall for a short time just before flowering. The flowers occur in dense, terminal heads and are a most attractive sight in spring. The fruits are very popular with birds.

Ekebergia capensis (Meliaceae)

A strikingly beautiful species in full flower and fruit. Often confused with *Harpephyllum caffrum*. The new leaves are red, turning a glossy dark green which is attractive throughout the year. It makes an excellent shade tree (Van Wyk, W.C.E. 1972), can be used as a windbreak (Poynton 1972) and a street tree (National Herbarium, Pretoria). Easily cultivated, it does particularly well in deep, sandy soil (Palmer & Pitman 1972). Young plants should be sheltered in highveld gardens (Eliovson 1965). Slow-growing (Poynton 1972) to moderately fast-growing (Palgrave 1977; Palmer & Pitman 1972; Van Wyk, W.C.E. 1972).

Entada spicata (Fabaceae)

A potentially excellent security hedge plant for the coastal belt and eastern Transvaal escarpment. It is a densely thorny plant probably avoided by browsers. The recurved thorns are arranged in five longitudinal rows along the branches and stems, and are scattered along the leaf petioles and rachis. It is best used on its own in well lit situations. In shade and where there is support it tends to scramble and open up underneath. Propagation should be possible from seed.

Erica caffra (Ericaceae)

A fairly fast-growing evergreen shrub that makes an excellent low windbreak, and could be used as a satisfactory untrimmed hedge (Eliovson 1965).

Erythrophysa alata (Sapindaceae)

An ornamental, drought-hardy and sun-loving species. The attractive red fruits are 3-lobed, inflated capsules. It can be used as a large, informal hedge (King 1951).

Eugenia capensis (Myrtaceae)

Usually a much branched shrub with dense, glossy foliage. The fruit is a small berry which is pleasantly flavoured but sometimes rather acid. It should make a good, neat hedge in sandy, warm areas (Palmer & Pitman 1972), i.e. a similar use to the European myrtle to which it is related.

Eugenia natalitia

It has been planted as a hedge in northern Zululand (Palmer & Pitman 1972).

Euphorbia (Euphorbiaceae)

The succulent *Euphorbia* spp. deserve special attention. Some species very closely resemble the 'ideal' security barrier plant, being sturdy, armed with spines and having a milky latex that is highly irritant. In some species the latex is so toxic that it would serve as an immediate deterrent to any intruder. Southern Africa has many species of succulent *Euphorbia*, ranging from a few centimetres to more than 10 metres high. A security hedge could be made entirely from combinations of several species. The *Euphorbia* spp. are all very drought resistant and need little attention. The poisonous species could be used especially as browse-resistant barriers or used on the periphery of a barrier to protect palatable species. The poisonous *Euphorbia* spp. and thorny *Acacia* spp. could make a very effective and formidable combination planting (Figure 5). The *Acacia* thorns will readily tear into the *Euphorbia* causing the release of latex which is highly irritant to the skin and eyes. The poisonous species should not be planted near bee-hives since the honey produced is likely to be most unpalatable (Anderson *et al.* 1973).

Euphorbia avasmontana

A potential irritant filler on the edge or periphery of a barrier where it will receive sufficient sunlight. It maintains ground density and is very slow-growing (D.S. Hardy pers. comm.). The latex is highly irritant and has been used as a source of arrow poison (National Herbarium, Pretoria). It should be resistant to browsing. It must be handled with extreme caution because of the toxic latex.

Euphorbia cooperi

A potential irritant filler and framework plant. It maintains ground density for 10 to 15, or even 20 years (H. Matthysen pers. comm.) (Figure 20A). Thereafter it loses its lower branches and develops a long, clean trunk. The gaps formed by the loss of the lower branches can be filled with either young plants or cuttings of the same species. It is easily propagated from seed and truncheons. Branching can be induced by cutting off the terminal segments at the nodes. Truncheons should be taken in August or September. Under nursery conditions, plants can set seed after two years and a seedling will take about three years to reach 2 m in height. Under optimal conditions, a plant can produce four segments per year. Unlike many *Euphorbia* spp., *E. cooperi* can stand a lot of watering and responds to it provided the soil is well-drained (H. Matthysen pers. comm.). The latex causes extreme skin and eye irritation; is volatile and has been used as a fish poison (Watt & Breyer-Brandwijk 1962). Browsers avoid the plant (Van Wyk, P. 1974). It

must be handled with extreme caution because of the toxic latex.

Euphorbia grandialata

It closely resembles the 'ideal' security barrier plant. It is sturdy, spiny, maintains ground density and forms dense, spreading clumps up to 2,5 m high (Figure 20B). It is easily propagated from seed and truncheons. The latex appears to be very irritant and poisonous, with a powerful, unpleasant smell. It should be handled with extreme caution on account of the toxic latex. Honey made from the plant acts as a powerful laxative and the plant is avoided by animals and man (M. Meintjies pers. comm.).

Euphorbia grandicornis

It closely resembles the 'ideal' security barrier plant. It is an extremely spiny, succulent shrub which produces erect, stout branches from ground level (Figure 20C). The numerous spines are stout and up to 70 mm long (Figure 20D). The crown is spreading with an average spread of 2 to 5 m. According to one report it is a most tenacious plant and readily takes possession of an area once it gets a footing (National Herbarium, Pretoria). The author has on one occasion seen cuttings of this plant along a fence line in KwaZulu. It must be handled with extreme caution due to the poisonous milky latex in all parts of the plant. This latex causes vomiting and death in goats, extreme eye irritation and possibly blindness (Zulu man pers. comm.). It is browsed only by the black rhinoceros and is left untouched by domestic animals, even in heavily overgrazed and overbrowsed areas.

Euphorbia ingens

A potential irritant filler and framework plant. It is a single-stemmed tree with ascending branches and a very dense crown. Unlike *E. cooperi*, it does not maintain ground density when young and short fillers or cuttings will be necessary to fill in the lower gaps (see frontispiece). It must be handled with extreme caution as the toxic latex causes intense irritation and blistering of the skin as well as temporary or permanent blindness. The latex has also been used as a fish poison (Watt & Breyer-Brandwijk 1962). The plant is avoided by browsers (Van Wyk, P. 1974) although porcupines and cane rats are reported to eat the roots (Palmer & Pitman 1972). It has been used in Sekukuniland (Lebowa) as a live hedge around kraals and cultivated lands (see frontispiece).

Euphorbia ledienii

A potential irritant filler for the edge or periphery of a barrier where it will receive sufficient light. It produces numerous branches from the base and forms spreading clumps. Secondary branching is scarce and the clumps have an open appearance, thus precluding its use as a framework plant. It must be handled with extreme caution as the latex is irritant (Mitchell & Rook 1979; National Herbarium, Pretoria) and poisonous (Watt & Breyer-Brandwijk 1962). It is not generally eaten by animals (National Herbarium).

Euphorbia pseudocactus

It could be used as an irritant filler on the periphery of a barrier where it will receive enough sunlight. It is

avoided by animals, even in overgrazed areas. This, and its close affinity to *E. grandicornis* (there is evidence of hybridization (National Herbarium, Pretoria)) suggests that it is both poisonous and irritant.

Euphorbia tirucalli

A potential framework plant. It does, however, open up at the base (Figure 20E) unless it is clipped regularly. The open spaces can be filled with cuttings, which take well, or with a shade-tolerant short filler. It spreads easily from plantings but is not considered a nuisance plant. It is easily propagated from seed, cuttings and truncheons (Palmer & Pitman 1972; Van Wyk, P. 1974), grows fast and in almost any soil (White *et al.* 1941). It has even been used to stabilize cyanide-treated mine dumps (National Herbarium, Pretoria). It has been widely used in Africa as a live fence around villages and cultivated lands (Figure 20F). It is usually avoided by browsers except the black rhinoceros (Palmer & Pitman 1972) and the occasional goat. Reports regarding the toxicity of the latex are contradictory. According to Watt & Breyer-Brandwijk (1962) it is highly irritant to the skin and can cause temporary blindness. P. van Wyk (1974) reports that it can prove fatal if sufficient is swallowed. Noyes (1913), from the rubber industry in Natal, reports that he saw no cases of blistering or anything else except temporary eye irritation due to crude latex getting into the eyes.

Euphorbia virosa

A spiny, succulent shrub which branches from ground level to form dense clumps up to about 2 m high and 3 m in diameter. It is sturdy and strong enough to be used on its own as a framework plant. It can also be interspaced in the barrier as an irritant filler. Probably a very slow-growing plant in its natural habitat. It is reputed to be one of the most poisonous plants in Africa. The latex is extremely irritant and virulently poisonous; it was used by the Namaqualand Bushmen and Gogo of east Africa as an arrow poison (Watt & Breyer-Brandwijk 1962). It is eaten with impunity only by the black rhinoceros. Plants must be handled with extreme caution on account of the toxic latex.

Euryops virgineus (Asteraceae)

A potential low hedge plant. The small, yellow flowers are produced in clusters at the ends of branches. It will need cutting back to prevent it becoming bare of leaves and open underneath. It will do best in well-drained soil and in a sunny position.

Ficus natalensis (Moraceae)

A large, spreading, densely leafy and shady tree that has been suggested as a windbreak for the southern Cape (Van der Merwe *et al.* 1978). It is usually evergreen but likely to lose its leaves under moisture stress. The fruit is a small fig about 10 mm in diameter, not suitable for human consumption because of its unpleasant taste, but eaten by birds (Van Wyk, P. 1972). It is apparently fast-growing (Van Wyk, P. 1972) and easily propagated from truncheons (Van der Merwe *et al.* 1978) and cuttings (Van Wyk, P. 1972).

Ficus sur (= *F. capensis*)

A large, spreading tree that is ornamental and shady.



FIGURE 20.—A, *Euphorbia cooperi*. A potential irritant filler and framework plant. It maintains ground density for 10 to 15 years and thereafter develops a long, clean trunk; B, *Euphorbia grandialata*. A drought resistant, toxic plant that closely resembles the 'ideal' security barrier plant; C, *Euphorbia grandicornis*. A very spiny succulent shrub that is toxic, drought resistant and avoided by animals. A replacement for sisal (*Agave sisalana*); D, *Euphorbia grandicornis*. Heavily armed and exceedingly toxic; E, *Euphorbia tinucalli*. Unarmed and one of the least toxic of the *Euphorbia* species. It opens up at the base unless it is clipped regularly; F, *Euphorbia tinucalli*. Widely used in Africa as a live fence around villages and cultivated lands; G, *Flacourtia indica*. Armed with hard, woody spines. The fruit is a well flavoured but acid berry.

It has been suggested for use as a windbreak in the south-western Cape (Bands *et al.* 1973). The leaves are usually evergreen but are deciduous under moisture stress. The young leaves are a conspicuous and beautiful red. The fruit is a fig and is larger than most other wild figs. It is sweet, somewhat insipid and eaten by almost all fruit-eating birds (Palmer & Pitman 1972). It is moderately fast-growing (Bands *et al.* 1973) and easily propagated from truncheons (Palgrave 1977) and cuttings (Van Wyk, P. 1972). It has shallow, spreading roots which can be a nuisance in a small garden (Van Wyk, P. 1972). It coppices when felled (National Herbarium, Pretoria).

Flacourtia indica (Flacourtiaceae)

A sturdy, densely branching shrub or small tree that, like *Dovyalis caffra*, forms a close, impenetrable hedge, responding well to trimming (Howes 1946). It is much used as a security hedge plant in the West Indies and elsewhere (Howes 1946) and in South Africa as a garden hedge (Von Breitenbach 1965). The fruit is a well flavoured, but acid, berry (Figure 20G).

Freylinia tropica (Scrophulariaceae)

An attractive species which usually grows at high altitudes in cool, moist conditions; sometimes the roots actually stand in running water (Dyer 1959). It is slender, with rather loosely spreading branches. It has been used for a long time in its native habitat as a hedge plant (Dyer 1959).

Gardenia amoena (Rubiaceae)

A potential ornamental framework plant. In full sunshine it is usually a multi-stemmed, bushy shrub or small tree. It has short, rigid, spiny branches that are decussately arranged i.e. opposite each other, one pair at right angles to the next. The sweetly-scented flowers, up to 50 mm long, are white with pinkish-red on the corolla tube and undersurface of the petals. It probably has some resistance to drought but prefers moist sites. The best method of propagation is by cuttings which must be given bottom heat and plenty of moisture. Growth from seed is slow and seed should be sown in September (Eliovson 1965).

Gardenia cornuta

A small, densely branching tree with a twiggy crown. It is neat and decorative in flower and fruit. The white flowers, aging to yellow, have a sweet, heavy scent. Of the glossy, golden-yellow fruits it has been said that no other species in South Africa can compare with their beauty (Phillips 1943). The fruits are ovoid and measure up to 450 × 20 mm. They are often produced in profusion and remain on the tree for months.

Gardenia jovis-tonantis

A rigid, spreading shrub or tree. The showy, white flowers turn yellow with age.

Gardenia resiniflua

A small, much branched, drought-hardy species with attractive flowers.

Gardenia thunbergii

A potential hedge, screen and windbreak plant. The large, sweetly-scented white flowers and the large,

shining fruits are very decorative. It is very slow-growing (Eliovson 1965; Palmer & Pitman 1972; Von Breitenbach 1965).

Gardenia volkensii (= *G. spatulifolia*)

A potential hedge, screen and windbreak plant, or an exceedingly sturdy framework plant for a security barrier. It is a many branched, rigid tree or shrub with a spreading crown. It has a short, sturdy trunk or is multi-stemmed, especially in deep sand. Its large, spreading habit makes it unsuitable for small gardens. The white flowers are large, short-lived and become yellow with age. The flowering season may last a month or two. It does well in deep, loose sand. Large quantities of viable seed are produced and seed germinates easily if sown fresh. Moderately fast-growing; a tree at Skukuza grew to 3 m in seven years (Van Wyk, P. 1974).

Grewia flavescens (Tiliaceae)

A shrub with 4-angled stems, drooping branches and attractive yellow flowers. It is a declared invader plant in the Cape and Natal.

Grewia occidentalis

A moderately hardy, often multi-stemmed shrub, with a long flowering period. The mauve flowers measure about 30 mm in diameter and occur in small clusters. The small fruit is 4-lobed, square-shaped and edible, but dry. It is easily propagated from seed, cuttings and layering (Palmer & Pitman 1972). It makes a good, informal hedge (Van der Spuy 1957).

Greyia sutherlandii (Greyiaceae)

A strikingly beautiful species in flower, similar to *Erythrina* spp. (coral trees or kafferbome). The red, bell-shaped flowers are produced in dense spikes up to 120 mm long, during autumn and winter when it is without leaves. In autumn the leaves turn shades of bright red. It is slow-growing (Poynton 1972) to fairly fast-growing under suitable conditions (Palgrave 1972). It will stand all but the most severe frosts and grows in fairly poor soils, but they must be well drained. It could make a most decorative, informal hedge or partition in the garden, easily established from cuttings or suckers.

Halleria lucida (Scrophulariaceae)

A hardy, attractive shrub which flourishes under a wide range of conditions. It can flower at one year of age when less than 1 m high (Palmer & Pitman 1972) and is attractive to a wide range of birds. It is easily propagated from seed, cuttings and layering (Palmer & Pitman 1972) and can be clipped into a nice hedge (Sim 1919). It has been suggested as a hedge plant in the humid lowveld of the eastern Transvaal and eastern slopes of the Drakensberg (Keet *et al.* 1978).

Harpephyllum caffrum (Anacardiaceae)

A handsome, evergreen tree that is similar to, and often confused with, *Ekebergia capensis*. It can be used as a trimmed hedge (Eliovson 1965), as a living fence (Palmer & Pitman 1972), a windbreak (Haigh & Wilhelmij 1973; Poynton 1972; Van der Spuy 1957), or background tree in a large garden or street tree (Palmer & Pitman 1972). According to Poynton (1972) it is rather indifferent as a windbreak. Mature trees branch rather

high above ground level and branches turn up at an angle after leaving the trunk. The sexes are separate on different trees. The red fruit is thinly fleshy and up to 250 mm long. It is rather sour, relished by children, makes a good rosé wine and also a jelly (Palgrave 1977).

Hibiscus ludwigii (Malvaceae)

An attractive species that has been used as a hedge (National Herbarium, Pretoria). The yellow flowers have maroon centres.

Hibiscus pedunculatus

A slender-growing, perennial shrub with sparse branching. It can be clipped into form (Sim 1919) and has potential as a low, decorative hedge. The beautiful pink flowers measure up to about 50 mm long and are produced almost continuously throughout the summer. Small hairs on the stems and leaves can irritate the skin. The irritation is mechanical and not chemical.

Hibiscus tiliaceus

This species has been in cultivation in many parts of the world for at least 200 years. It has been used as a hedge on the Natal South Coast and as a street tree in Durban (Palmer & Pitman 1972). The flowers are large and showy, yellow aging to apricot, with a deep maroon or blackish centre. They are produced freely but are short-lived.

Hippobromus pauciflorus (Sapindaceae)

A densely leafy, much branched shrub or small tree. It is often multi-stemmed. It has occasionally been planted as a hedge in Zululand (Palmer & Pitman 1972). All parts of the tree have a strong aromatic, but not unpleasant, scent when bruised or crushed. Bryant (1909) and Watt & Breyer-Brandwijk (1962) state that the plant is poisonous, particularly the leaves.

Homalium rufescens (Flacourtiaceae)

A much branched shrub. The small, sweetly-scented flowers are produced in showy profusion.

Hypericum revolutum (= *H. lanceolatum*) (Clusiaceae)

A beautiful, evergreen, very frost-hardy shrub that can be clipped into a hedge (Eliovson 1965). The bright yellow flowers are showy and are produced sporadically at most times of the year. It gives off a distinct and very powerful smell of curry and it should therefore not be planted too close to a house in case the smell becomes overpowering. It suckers from the roots and can be propagated by division of the root (Eliovson 1965).

Jubaeopsis caffra (Arecaceae)

A distant relation of the coconut palm (Wicht 1969) and a protected plant, occurring naturally only in the Transkei. The fruits measure about 20 mm in diameter and closely resemble little coconuts, both in smell and taste (Palgrave 1977). It is always multi-stemmed and becomes low and bushy when exposed to sea winds (National Herbarium, Pretoria). It has potential as a low windbreak or screen at the coast. It has been successfully propagated from seed especially in the United States of America where it is in great demand as a miniature palm (Palgrave 1977).

Kiggelaria africana (Flacourtiaceae)

A widespread and adaptable species that makes a fine shade tree and windbreak (Palmer & Pitman 1972; Von Breitenbach 1965). It is robust, squats firmly on the ground, has a spreading, rounded crown and usually dense, evergreen foliage. On the Witwatersrand it may lose its leaves for a very short time just before spring (Tree Society of Southern Africa 1964). It is moderately fast-growing (Poynton 1972). It is the foodplant of a common *Acraea* butterfly and by encouraging these attractive insects, can add an extra dimension to a garden (M.J. Wells pers. comm.).

Lannea discolor (Anacardiaceae)

This species shares with the *Commiphora* species the name 'never die' or 'live-long' since truncheons planted in the ground strike easily. The leaves are dark green on their upper surfaces and white below. They are striking in both colour and texture.

Lebeckia macrantha (Fabaceae)

A potential tall filler, not because of its height (up to 2,5 m) but because of its twiggy crown of spine-tipped, almost leafless branches which casts virtually no shade. It is usually multi-stemmed. An extremely drought-resistant plant. It will not tolerate a heavy summer rain-fall or hail storms but will tolerate more moisture during winter than in summer (Eliovson 1965).

Leucadendron (Proteaceae)

Generally speaking, members of the Proteaceae are not suitable for hedges. They are relatively short-lived and clipping tends to spread fungal infections, causing them to die off patchily (M.J. Wells pers. comm.).

Leucadendron coniferum

A potential low, decorative hedge. The bracts surrounding the flowerhead are bright yellow. The leaves are often tinged with red.

Leucadendron platyspermum

This species has been used as a hedge (Smith 1966).

Leucadendron salicifolium

This species always grows in very wet places, even in poorly-drained soils such as swamps and vleis (National Herbarium, Pretoria). It characteristically forms almost hedge-like screens along the banks of streams (Palgrave 1977). Male plants are very attractive and bright yellow or orange in the flowering season. It has been used as a hedge (Smith 1966).

Leucadendron salignum

This species has been used as a hedge (Smith 1966). It is a large bushy shrub and is very showy in August and September when the leaves near the tips of the branches turn a light golden-yellow. The male plants are showier than the females for they are a brighter yellow and the flowers are golden (Eliovson 1965).

Leucadendron uliginosum

This species has been used as a hedge (Smith 1966).

Loxostylis alata (Anacardiaceae)

Recommended by King (1951) as a large, informal hedge. It can also form a neat, clipped hedge (King 1951; Van der Spuy 1957). It is showy in full flower and the young leaves are an attractive reddish-bronze. It grows easily and quickly and can reach a height of 3 m in 10 years (Van Wyk, W.C.E. 1973).

Lycium (Solanaceae)

The *Lycium* spp. have great potential as hedge plants in the very cold and dry regions. Their twigs and leaves, however, are generally relished by stock and will have to be protected in the early stages of growth.

Lycium afrum

Reputed to make an excellent drought and frost-resistant, stock-proof barrier (Von Breitenbach 1965). It is usually a multi-stemmed, rigid, twiggy shrub with stout, upright stems and branches ending in sharp, spiny points. It has small, needle-like leaves that cast virtually no shade. It does not deteriorate or develop gaps when neglected. Roots may travel 6 to 9 m laterally, so the plant is unsuited as a garden hedge. The hard wood is difficult to trim, and trimmings left lying about can injure the feet of stock, such injuries being slow to heal. Branches blow off in high winds and may become entangled in sheep's wool (Howes 1946). It is easily raised from seed (Von Breitenbach 1965) and fast-growing (Palgrave 1977). It has been used as a hedge plant in south and east Africa, parts of Australia and New Zealand. It has, however, become a pest in parts of Australia (Howes 1946) and therefore caution should be exercised before planting it outside South Africa (where it is kept in check by its natural enemies).

Lycium ferocissimum

Very similar in appearance to *L. afrum* and is also reputed to make an excellent stock-proof barrier that does not open up with neglect (Yeates 1942). It is a valuable shelterbelt plant for the very cold and dry regions. The hard wood is difficult to trim and the spines are liable to injure stock and workers (Yeates 1942). The fruits are edible, but have been suspected on more than one occasion of poisoning humans and pigs, the symptoms being those of narcotic poisoning (Watt & Breyer-Brandwijk 1962). The spine is also said to be slightly poisonous. Moderately fast-growing, it has been used in Australia and New Zealand as a security hedge and for shelter (National Herbarium, Pretoria; Yeates 1942). Like *L. afrum*, it has become a pest in southern Australia and parts of New Zealand and therefore caution should be exercised before planting it outside South Africa.

Lycium hirsutum

Similar to the two preceding species and has potential as an excellent drought- and frost-resistant hedge plant. It can be used as a short filler since it tolerates light shade.

Lycium oxycarpum

Can be used as a framework plant but is not very sturdy. It may be most effective as a tall filler in combination with a species such as *Scutia myrtina*. The shade cast is light. The seed germinates easily, the plants are quick-growing — at least in the early stages — and

they are completely hardy. It was used by the early colonists in South Africa to make garden hedges and living fences around kraals to keep out wild animals (Palmer & Pitman 1972).

Lycium prunus-spinosa

A rigid, twiggy, densely-branching and spiny shrub that could make an excellent drought- and frost-resistant framework plant or short filler.

Machura africana (= *Cardiogyne africana*) (Moraceae)

Its scandent growth habit makes it a good consolidation plant and this, together with its sharp, woody spines, makes it exceedingly difficult to get through. A spine-prick causes an irritant, burning sensation. Under suitable conditions it can form an effective barrier after five years and it has been used as a security hedge plant in Mozambique (D. Edwards pers. comm.).

Maerua cafra (Capparaceae)

An ornamental, evergreen, hedge plant (Eliovson 1965). The sweetly-scented and delicate, spidery blooms are produced in clusters towards the ends of the branches. It starts to flower when small and grows well and fairly rapidly in cultivation (Palmer & Pitman 1972).

Maytenus capitata (Celastraceae)

This species has potential as a very sturdy framework plant or short filler. Usually multi-stemmed and rigid with dense branching and exceptionally strong and sharp-pointed spines. It forms clumps 2 to 5 m in width and would seem to be resistant to trampling. It maintains ground density and casts only light shade.

Maytenus heterophylla

One of the commonest, most widespread and variable species in southern Africa. It has adapted to a wide range of soil and climatic conditions and for this reason alone is well worth cultivating. It is usually a rugged shrub with hard, tough wood and robust spines (Figure 21). Pricks from spines are said to become inflamed (Palmer & Pitman 1972). In full bloom, it is an arresting sight. Unfortunately, the flowers usually have a strong foetid odour. Sometimes the flowers have no scent and occasionally they are sweet-smelling. In the Kruger National Park it is browsed by various species but the undamaged condition of the plants indicates that utilization is minimal (Van Wyk, P. 1974). It can spread in overgrazed land. Clipping should encourage a denser basal growth and so overcome its tendency to open up underneath. Seed germinates well but young plants grow very slowly (Van Wyk, P. 1974). It has occasionally been used as a live fence, but more often the severed branches have been used to enclose kraals and cultivated lands. It has been used as a garden hedge (National Herbarium, Pretoria) and has potential as a low windbreak or shelterbelt.

Maytenus polyacantha

Usually a multi-stemmed shrub which, in the eastern Cape, is sturdy and heavily armed with hard, sharp spines. The plants in the Orange Free State and Transvaal are shorter and less sturdy with slender spines. The eastern Cape form could make an excellent framework plant and a short filler, particularly if it is clipped. It can form

dense, spreading thickets. It has been used as a low garden hedge (National Herbarium, Pretoria).

Maytenus senegalensis

Usually a sturdy, multi-stemmed thorny shrub which often grows in thickets. It is a potential garden hedge. Apparently not browsed in Mkuze Game Reserve (P. Goodman pers. comm.). In parts of KwaZulu where the land is overgrazed it is one of the few shrubs to be seen. It can spread in overgrazed areas and is a declared invader plant in Natal.



FIGURE 21.—*Maytenus heterophylla*. Armed with hard, sharp-pointed spines. The flowers are attractive but usually have an unpleasant smell.

Melanthus comosus (Melianthaceae)

Attractive in flower and fruit but the crushed plant has a disagreeable smell, hence the Afrikaans name 'kruidjie-roer-my-nie'. The leaf and root are believed to have caused fatal human poisoning (Sapeika 1944). It has been used as a hedge (National Herbarium, Pretoria).

Mimusops caffra (Sapotaceae)

This species occurs naturally at the coast on sand dunes where it is fully exposed to sea winds and salt spray. It is a valuable sand-binder and would be useful as shelter to seaside houses and caravan parks. The orange-red fruit has a sweet, starchy pulp and agreeable flavour (Palmer & Pitman 1972).

Mucuna coriacea subsp. *irritans* (Fabaceae)

A potentially excellent irritant filler. The highly irritant hairs would act as an immediate deterrent to an intruder. These hairs occur on the pods and to a much lesser degree, on the leaves. The irritation and pain may last for a week or more (Mitchell & Rook 1979; Smith 1966). The hairs are impossible to remove from clothing and such clothing is best burnt or discarded (D.S. Hardy pers. comm.). Plants must be handled very carefully and their presence in the barrier could restrict upkeep such as trimming of framework plants. It would not be suitable for use in close proximity to offices and buildings since the irritant hairs can be carried by the wind. Propagation should be fairly easy from seed.

Mundulea sericea (Fabaceae)

This is a most attractive plant with light green to silvery-green foliage and mauve, lilac or purple flowers.

According to Eliovson (1965) it will start flowering at a height of about 0,45 m. It can form a neat, clipped hedge. It is very drought-hardy and moderately frost-hardy but should be given a warm, sunny position in very cold areas (Eliovson 1965). It is slow-growing (Palmer & Pitman 1972). The bark, roots and seeds are widely used as fish poison, but the leaves are still eaten by wild and domestic animals (Palmer & Pitman 1972).

Myrsine africana (Myrsinaceae)

A very frost-hardy plant that has even been grown at Kew Gardens in London without any protection in winter (Eliovson 1965). The small, dark, glossy green leaves and red berries are attractive. It is neat and compact and can form a low hedge (Eliovson 1965; Keet *et al.* 1978; Poynton 1972).

Nylandtia spinosa (Polygalaceae)

A compact, spiny shrub that has potential as a short filler for the very cold and dry regions.

Nymanina capensis (Meliaceae)

An attractive and very drought-hardy plant that occurs naturally in the driest parts of South Africa. It is common in Namaqualand, the Richtersveld and the Karoo. It will not survive for long in high rainfall areas (Palgrave 1977) and it needs well-drained soil. The fruits are very decorative, red, inflated capsules that hang from the plant like Chinese lanterns.

Obetia tenax (= *Urera tenax*) (Urticaceae)

A potential irritant filler which casts little shade. Although it is deciduous, it is still effective in winter due to irritant hairs on the stems and branches. The flowers, which appear before the leaves, are densely coated with hairs. Softly woody and sparsely branching, it would offer little physical resistance to an intruder. It is easily propagated from seed and cuttings (Van Wyk, P. 1972; Von Breitenbach 1965). It is recommended by Van Wyk, P. (1972) as a security barrier due to the highly irritant hairs which occur on all parts of the plant, especially the leaves (Figure 22A). These hairs cause an immediate and intense burning of the skin and sometimes blistering. Browsed only by the black rhinoceros (Palmer & Pitman 1972).

Ochna natalitia (Ochnaceae)

This species has been used as a hedge in South Africa (National Herbarium, Pretoria). The foliage, flowers and fruit are attractive. The young leaves are copper-coloured. The fruit is black with a red calyx.

Ochna serrulata (= *O. atropurpurea*)

This species is a proven performer as a clipped hedge (Stapleton 1940) and makes a colourful, informal hedge, attractive at all seasons of the year (Van der Spuy 1957). The foliage, flowers and fruit are attractive. The young leaves are pinkish-bronze. It starts flowering at a height of about 0,45 m (Eliovson 1965) and the fruit is black with a red calyx. It is fairly slow-growing, will grow in poor soil and in arid places but requires plenty of water throughout the year to look attractive, fresh and leafy (Eliovson 1965). The fruits are a major source of food for birds (Spence 1975).

Olea capensis subsp. *macrocarpa* (Oleaceae)

This species can be used as a windbreak (Poynton 1972). Unlike the following species it has little resistance to drought and frost. It is slow-growing, about 0,3 m per annum or less (Poynton 1972).

Olea europaea subsp. *africana* (= *O. africana*)

The wild olive is one of the most widespread species in southern Africa and through its natural distribution it endures the utmost extremes of climate and soil conditions. Under good conditions it usually has a dense, round and symmetrical, spreading crown supported by a sturdy trunk. It makes a satisfactory clipped hedge (Poynton 1972; Stapleton 1940) and is valuable as a low windbreak and screen and for ornament in arid regions (King 1951). It makes a neat, formal-looking street tree. It grows well in cultivation although growth rate is generally slow, about 0,3 m per annum or less (Poynton 1972). It is suitable for all parts of South Africa except where frosts are very severe.

Oncoba spinosa (Flacourtiaceae)

An ornamental, evergreen hedge plant for the warm frost-free regions. It is a heavily armed, spreading bush (Figures 22B & C) that will grow in both full sunshine and full shade. The flowers are large, showy and fragrant. It has been cultivated for ornament and as a hedge (Eliovson 1965).

Parkinsonia africana (Fabaceae)

Has potential as an extremely drought-resistant tall

filler. It is a rather straggly shrub or small tree with an open crown and sparse foliage (Figure 22D). The branches are beset with stout, vicious thorns. The attractive, small, yellow flowers are borne in clusters along the stem.

Pavetta lanceolata (Rubiaceae)

This species makes a beautiful garden shrub and an excellent hedge (King 1951; Van der Spuy 1957). The white, sweetly-scented and very showy flowers are produced at Christmas time. The leaves are always neat and attractive. It is the food plant of the attractive 'humming-bird' hawk moth (M.J. Wells pers. comm.).

Peddiea africana (Thymelaeaceae)

Similar looking to *Pavetta lanceolata*, but with less attractive flowers. Recommended as a garden hedge and windbreak for the Natal south coast (Nicholson 1970). It is a shade-loving species with attractive, dark green, glossy foliage. There are reports that the plant is poisonous (Palmer & Pitman 1972) and that it has been used for homicidal purposes by natives (Sapeika 1944). Steyn (1934), however, reports that, in an experiment in which 100 g of dried material was administered to a sheep, no ill effects were produced.

Phaeoptilum spinosum (Nyctaginaceae)

A potential framework or short filler plant for the very dry regions. It is a multi-stemmed, compact and spiny shrub with entangling, drooping branches. Reports of its palatability are contradictory. One report in the National Herbarium in Pretoria states that it is immune

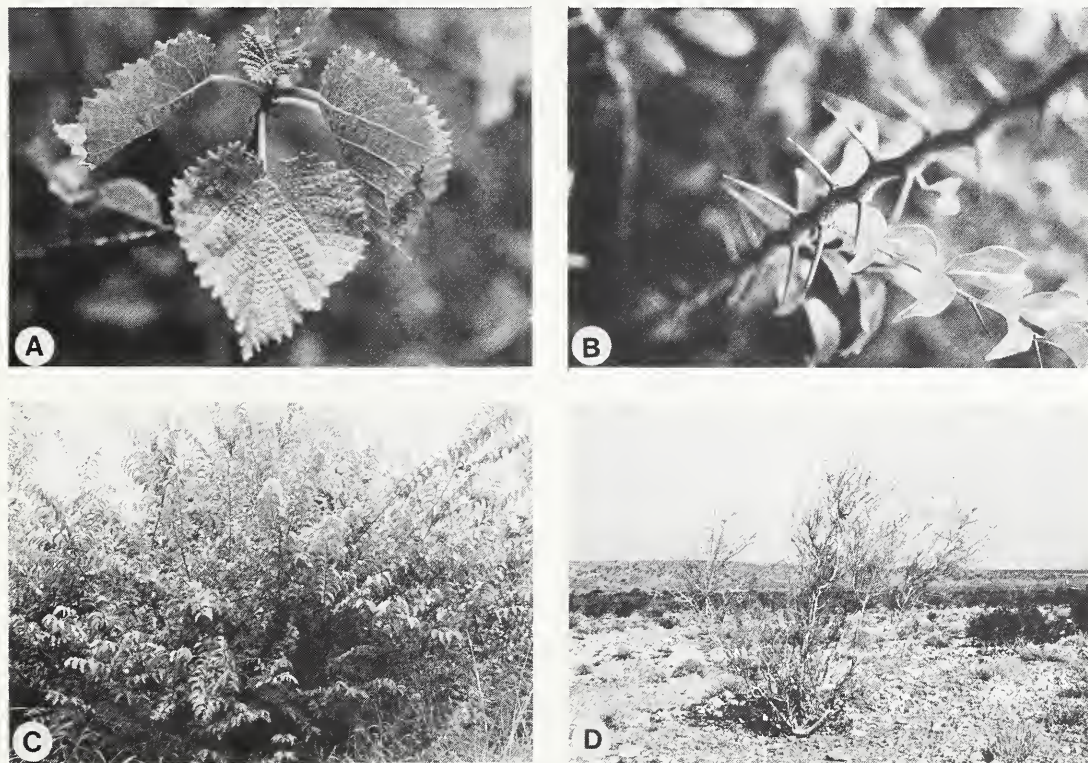


FIGURE 22.—A, *Obetia tenax*. A potential irritant filler. Irritant hairs occur on all parts of the plant, especially the leaves; B, *Oncoba spinosa*. A heavily armed shrub; C, *Oncoba spinosa*. A densely foliated, spreading shrub that will grow in both full sunshine and deep shade; D, *Parkinsonia africana*. A potential tall filler. It is exceedingly drought resistant, has fine foliage and vicious thorns.

from browsing by goats and another claims that it is an excellent fodder bush.

Phoenix reclinata (Arecaceae)

A potential evergreen and ornamental screen especially for water-logged soils. It sometimes grows as a stemless, suckering bush, sometimes with short multiple stems and occasionally as a many-stemmed tree. As a multi-stemmed, suckering bush it would be most effective as a security barrier. It is sturdy, spreading, maintains ground density and has large, tough leaves, the lowermost leaflets being reduced to spines. These spines are hard, sharp-pointed and carry irritants that can cause severe wounds (M.J. Wells pers. comm.). The flowers of male plants form large, showy, cream-coloured sprays. The tough leaves are usually eaten only by elephants, but in times of drought, by other browsers as well. It is easily propagated from seed and suckers, and transplants well (Palgrave 1977; Van Wyk, P. 1972). It adapts to a wide range of conditions and need not be planted close to water, but prefers moist conditions (Van Wyk, P. 1972). It is slow-growing in the National Botanical Gardens in Pretoria, but should be considerably faster in warmer, moister conditions.

Pisonia aculeata (Nyctaginaceae)

A strong climber with hard, recurved thorns. It is a potential entangling plant for the coastal belt but may shade out other species. It could be used as a fence reinforcer and has been used as a security hedge in the tropics (Howes 1946).

Pittosporum viridiflorum (Pittosporaceae)

A hardy, neat and attractive species in flower and fruit. The flowers have a jasmine- or citrus-like scent and are produced in profusion in spring. The fruit is a small, creamy-brown to orange capsule that splits open to release bright red, resinous seeds. It can be used as a hedge (Eliovson 1965; Keet *et al.* 1974; Palmer & Pitman 1972), windbreak (Van der Spuy 1957) and screen. It is recommended for use on the Witwatersrand. It is slow-growing, about 0,3 m per annum or less (Poynton 1972).

Plumbago auriculata (= *P. capensis*) (Plumbaginaceae)

An attractive, very drought-resistant species that is undemanding as to soil, stands neglect and makes a charming, informal hedge. It will flower almost throughout the year provided it is not trimmed too severely. It does, however, sucker freely and tends to spread in gardens (King 1951). It is a food plant of small 'blue' butterflies, and they are almost always in attendance (M.J. Wells pers. comm.).

Podocarpus elongatus (Podocarpaceae)

A potential evergreen hedge or low shelterbelt. The seed is bluish-green with a scarlet-coloured, fleshy base. It is usually produced in large quantities and then makes a fine sight.

Podocarpus falcatus

The Outeniqua yellowwood occurs naturally in the high, moist forests of the southern Cape, in wooded ravines, mountain forest and coastal swamp forest (Palgrave 1977). It can be used as a windbreak and a trimmed hedge, although it is somewhat indifferent for both

purposes (Poynton 1972). It is one of the fastest-growing indigenous trees. According to one report a tree of 20 years had reached a height of 21 m (National Herbarium, Pretoria). Poynton (1972) gives an average growth of 0,6 m per annum.

Podocarpus henkelii

Henkel's yellowwood is a handsome, evergreen tree with a dense, somewhat spreading crown supported by a tall, straight trunk. The attractive, drooping foliage is spirally arranged and a shiny, dark green. It retains its dense foliage to the ground when lit sufficiently from the side. It is suitable as a shade and ornamental tree in streets, parks and gardens throughout the more humid parts of South Africa where frost is not too severe. It makes an excellent windbreak (Poynton 1972), screen or a neat, clipped hedge. It is slow-growing, about 0,3 m per annum or less (Poynton 1972).

Podocarpus latifolius

The real yellowwood makes a moderately good windbreak and can be used as a trimmed hedge (Poynton 1972). It is appreciably frost-hardy, growing naturally on exposed mountain slopes at such cold localities as Harrismith in the Orange Free State, and Dullstroom and Wakkerstroom in the Transvaal, but then its growth is considerably stunted. It grows as a tall tree in high forest. It is slow-growing, about 0,3 m or less per annum (Poynton 1972).

Polygala myrtifolia (Polygalaceae)

This species makes an attractive evergreen hedge that responds well to clipping (Palmer & Pitman 1972). It is a variable species, mainly in the size and shape of the leaves, and consequently propagative material should be selected from the most attractive forms (Verdoorn 1957). It is a prolific bloomer, flowering throughout the year in Natal and from August to November in the Cape (National Herbarium, Pretoria). It has become an invader in coastal areas of Australasia and should be used with caution outside South Africa (M.J. Wells pers. comm.).

Portulacaria afra (Portulacaceae)

An excellent garden shrub and hedge plant for the hot, dry, frost-free areas. It is evergreen, fast-growing (Palgrave 1977) and makes a neat, compact hedge if clipped regularly, and an informal, unclipped screen or partition. It is an effective sand-binder and provides excellent and valuable fodder (Palgrave 1977). It could be tried as a border to paddocks. It is a honey plant in the eastern Cape and Little Karoo (Anderson *et al.* 1973).

Protasparagus (Liliaceae)

Potential entanglers, when given support they tend to scramble. They have sparse foliage which casts little shade and are armed with hooked spines which are generally hard and sharp-pointed. The spines cannot compare with, for example, the thorns of the *Acacia* spp. *Protasparagus capensis* (Figure 23) sometimes has extremely effective spines — they occur in threes and range from extremely hard, sharp and recurved to straight and soft. They are apparently not vigorous growers with some species, for example *P. laricinus*, having a perennial root system but annual (deciduous) stems (A.A. Obermeyer pers. comm.). This condition may not pertain to

all species but is most likely to occur in those species subjected to extreme dry and/or cold conditions.

Protasparagus aethiopicus (= *Asparagus aethiopicus* var. *aethiopicus*)

Protasparagus africanus (= *Asparagus africanus*)

Protasparagus angusticladus (= *Asparagus aethiopicus* var. *angusticladus*)

Protasparagus capensis (= *Asparagus capensis*)

Protasparagus krebsianus (= *Asparagus krebsianus*)

Protasparagus larinicus (= *Asparagus larinicus*)

Protasparagus racemosus (= *Asparagus racemosus*)
(= *Asparagus saundersiae*)



FIGURE 23.—*Protasparagus capensis*. A potential entangler. It has fine foliage and vicious, hooked spines.

Pterolobium stellatum (Fabaceae)

It could make an excellent framework for a security barrier. In a combination planting, however, its dense, scandent growth may smother other species. It has been used as a living fence in the Transvaal, and according to one report it promises to be of use in stopping erosion of dongas (National Herbarium, Pretoria). It is an attractive plant in flower and fruit. The brilliant red pods are produced in July and August and remain for several months.

Putterlickia pyracantha (Celastraceae)

A potential framework plant or short filler on the edge of a barrier. Similar to *Maytenus capitata* and *M. polyacantha*, but less robust. Its spines are also not as hard and break more easily. A spine-prick causes a burning sensation (Palmer & Pitman 1972). The fruit is an ornamental, red, woody capsule. It is slow-growing, but once established it grows easily and is a valuable hedge plant in dry districts (Eliovson 1965).

Putterlickia verrucosa

A potential framework plant or short filler for the moist, frost-free areas, particularly the coastal belt. It tolerates shading but then becomes open and straggly in habit, becoming an effective entangler. A spine-prick can cause a burning sensation and inflammation of the skin. The fruit is an attractive, red, woody capsule. It can be grown easily from cuttings (D.S. Hardy pers. comm.). It grows very slowly in the National Botanical Garden in Pretoria but should be faster-growing in hotter and moister regions.

Rapanea melanophloeos (Myrsinaceae)

A hardy, attractive and easily cultivated species (Palgrave 1977). It is moderately fast-growing, about 0,6 m per annum and can be used as a windbreak (Poynton 1972).

Raphia australis (Arecaceae)

This magnificent palm with leaves up to 9 m long has potential as a windbreak or screen for the hot and moist coastal belt. It is naturally a swamp-dweller and in cultivation will grow fast where plenty of water is available (Wicht 1962). It is said to reach a height of 12 to 15 metres in 20 to 40 years from seed (Obermeyer & Strey 1969). It is one of the few members of the palm family that flowers once and then dies, its average life span being 25 to 30 years (Wicht 1969). The natural distribution of this species coincides with that of the palm nut vulture, a rare bird species, that strips off and eats the scaly covering of the fruit, an action which aids the bird in the digestion of its food and permits the germination of the seed (I.F. Garland pers. comm.).

Rauvolfia caffra (Apocynaceae)

This species is nearly always associated with available groundwater but will stand a little drought (Immelman *et al.* 1973). It is moderately fast-growing, about 0,6 m per annum and can be used as a windbreak (Poynton 1972). It makes a luxuriant shade tree (Immelman *et al.* 1973). The attractive, glossy leaves occur in whorls of 3 to 5.

Rhamnus prinoides (Rhamnaceae)

The dogwood is an attractive species with glossy green, dense foliage and berry-like fruits that turn red and finally black with maturity. The fruits are a major source of food for birds (Spence 1975). It is a proven clipped hedge (Poynton 1972; Stapleton 1940) and is particularly suitable for the cold and moist regions, including the Transvaal highveld. It is moderately fast-growing, about 0,6 m per annum (Poynton 1972).

Rhigozum brevispinosum (Bignoniaceae)

A drought-hardy, deciduous shrub with sparse foliage. It is most attractive and colourful in spring when decorated with bright yellow, bignonia-like flowers. It could be tried as an informal low hedge or partition in gardens in the very dry regions. It should be grown in well drained soil.

Rhigozum obovatum

A hardy, undemanding shrub that produces masses of beautiful bignonia-like flowers in spring and early summer. It does not need pruning, but if necessary, it should be trimmed immediately after flowering, for the flowers appear on the previous season's growth (Eliovson 1965). It should be grown in well-drained soil.

Rhus (Anacardiaceae)

Most of the karrees produce copious quantities of small fruits — an important source of winter food for birds (Spence 1975).

Rhus ciliata

Could make an excellent, sturdy, framework plant for the cold and dry regions. It often grows in large

colonies and tends to form thickets. Mature plants open up underneath as the crowns cast more shade. The branches are not always armed with spines.

Rhus erosa

A hardy, evergreen species with fine foliage. It has sometimes been used to make an attractive hedge (Palgrave 1977; Palmer & Pitman 1972). It is also a valuable soil-binder, its removal often being followed by serious erosion (Palgrave 1977).

Rhus gueinzii

A potential framework plant. It is sturdy, frequently multi-stemmed, with a spreading crown and flexuous, arching branches. Spines may be absent, confined to the main branches or be on all parts of the plant.

Rhus incisa

A very drought-hardy species with rigid and spreading branches. It has been recommended as a windbreak for coastal areas in the Cape (Van der Merwe *et al.* 1978).

Rhus lancea

The karree is a tree that should be exploited to its full potential in the interior of South Africa. There are very few other species — either indigenous or introduced — that combine such favourable characteristics. It is evergreen, attractive and develops immense character with age; it is moderately fast-growing (Poynton 1972), easy to propagate and cultivate, and it is undemanding as to soil; it is exceedingly drought resistant, tolerates a great deal of frost and attains tree size under conditions too harsh for the majority of other tree species. It makes a suitable shade and street tree, windbreak, screen and hedge. Due to its ability to spread under certain conditions, particularly veld mismanagement, it has been declared an invader plant in the Transvaal.

Rhus leptodictya

The mountain karree, like the karree (*Rhus lancea*) should be exploited to its full potential in the interior of South Africa. It closely resembles *R. lancea* but its branches are more drooping and it does not grow in such dry areas. It makes an attractive windbreak, screen, street tree and clipped hedge. It is suitable for planting in the Johannesburg and Pretoria areas where it occurs naturally on the hills surrounding the cities.

Rhus longispina

Could make an outstanding, drought-hardy, security hedge. In parts of its distribution it resembles the 'ideal' framework plant. It is sturdy with a rounded, spreading crown and is exceptionally densely branching right down to ground level (Figure 24A). This round, compact growth form is encouraged by browsing by livestock and should therefore, also be obtained by clipping. The spines are hard and sharp-tipped, particularly in the young, vigorously-growing shoots. It was used by the early colonists as a spiny hedge to keep wild animals out of gardens and kraals (Smith 1966) and is recommended by Palmer & Pitman (1972) as a thick garden hedge.

Rhus montana

A frost-hardy species that occurs naturally in high

mountain areas, often along river banks. It has a graceful, drooping habit and should make an excellent garden tree. It has been planted as a hedge in the eastern Transvaal (Palmer & Pitman 1972).

Rhus pyroides

Widely distributed in southern Africa and adapted to a wide range of soil and climatic conditions. It is sturdy, either multi-stemmed or low-branching, with a dense, spreading crown (Figure 24B). The spines are hard and stout (Figure 24C), a spine prick or scratch causing stinging and burning of the skin (Palgrave 1977; Palmer & Pitman 1972). A decorative species for the garden as either a tree or a hedge (Palmer & Pitman 1972). If desired, propagative material can be selected from spineless forms.

Rhus refracta

A potential framework plant. Similar to *Rhus longispina* but generally smaller, less sturdy and less spiny.

Rhus undulata

A frost- and drought-hardy species that has potential as a hedge. It should, however, be used with caution in farming areas since it is capable of rapid spread and its leaves are unpalatable (Palmer & Pitman 1972).

Rinorea angustifolia (Violaceae)

A shade-tolerant, very floriferous species that can form a pretty hedge (Sim 1919).

Rubus (Rosaceae) (Figure 24D)

Potentially useful entanglers for the cold and moist regions. Easily spread by birds; only indigenous species should be used and preferably only in the areas where they occur naturally.

Rubus ludwigii

A thorny, softly woody perennial that could be used as a short filler in the very cold and moist regions. Propagation should be possible from seed or cuttings.

Rubus pinnatus

A potential entangler. The flexuous, widely spreading branches are armed with numerous sharp thorns. Propagation should be possible from seed or cuttings. It can become a weed (e.g. at the Tate Vondo Tea Estate in the north-eastern Transvaal (National Herbarium, Pretoria)).

Rubus rigidus

A potential entangler for the moist regions from an altitude of 2 000 m or more down to sea level. Propagation should be possible from seed or cuttings.

Schotia afra (Fabaceae)

A spreading, usually evergreen shrub or tree that branches close to the ground. The attractive, red flowers are produced in profusion, but are often on the old wood and are somewhat hidden by new leaf growth. It has potential as a low windbreak for hot and dry districts, including coastal areas. It is extremely wind- and drought-resistant and enjoys a hot, frost-free climate.

Schotia brachypetala

A handsome, semi-evergreen tree that drops its

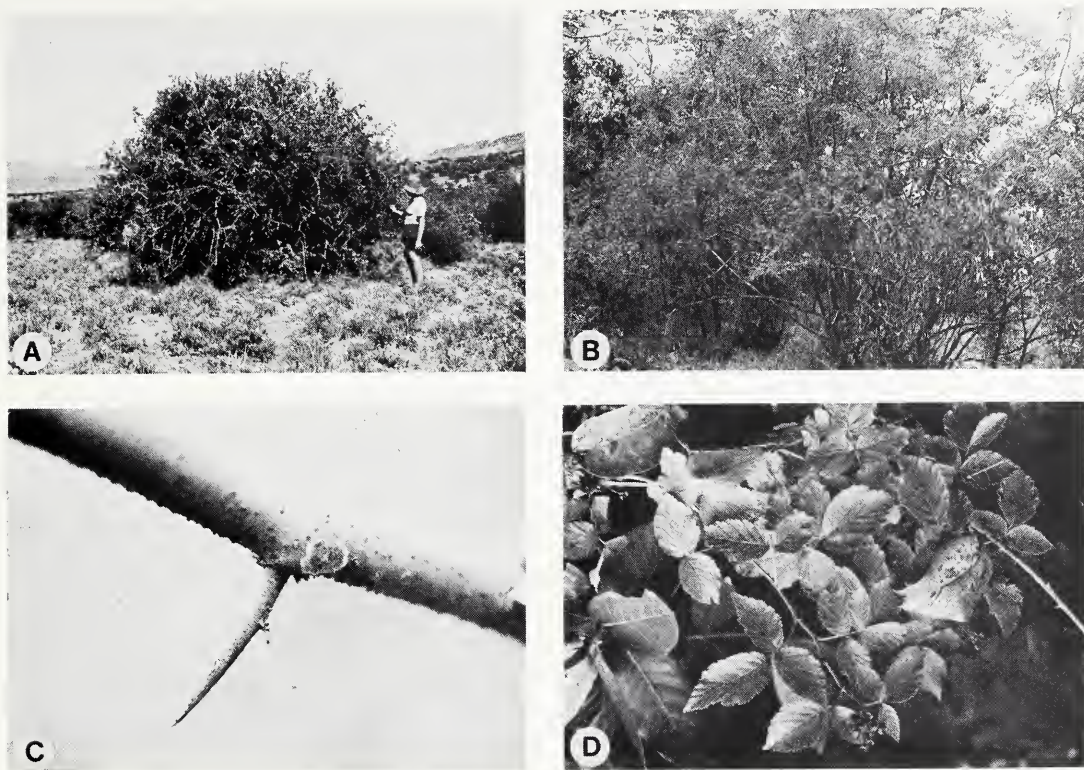


FIGURE 24.—A, *Rhus longispina*. Closely resembles the 'ideal' framework plant. It is sturdy with a rounded, spreading crown and is exceptionally densely branching right down to ground level; B, *Rhus pyroides*. A widespread and very adaptable species. It is sturdy and has a dense, spreading crown; C, *Rhus pyroides*. The spines are hard and stout. Sometimes it is unarmed; D, *Rubus* sp. Potential entanglers for the cold and moist regions.

leaves for a short time before flowering. It has a dense, rounded, spreading crown that bears attractive, red flowers in branched sprays on the old wood during spring or early summer. The flowers produce large quantities of nectar which makes them very attractive to birds and bees. The seeds from the attractive, woody pods can be roasted and eaten (Palmer & Pitman 1972); they are fairly nutritious but have little flavour (National Herbarium, Pretoria). It is an excellent shade and ornamental tree for hot, dry regions. It can also be used as a windbreak (Poynton 1972). It is slow-growing — about 0,3 m per annum or less (Poynton 1972), to moderately fast-growing — 4,6 m in 10 years (Van Wyk, W.C.E. 1971).

Schotia latifolia

An attractive species in foliage and flower. It has been cultivated to a limited extent as a shade and ornamental tree and can be used as a windbreak (Immelman *et al.* 1973). The pale pink flowers are sometimes produced in profusion but flowering tends to be sporadic (M.J. Wells pers. comm.). It is slow-growing, about 0,3 m per annum or less (Immelman *et al.* 1973).

Scolopia flanaganii (Flacourtiaceae)

A potential framework plant for the moderately cold regions. Usually a compact, leafy shrub with slender spines. It is often thicket-forming.

Scolopia mundii

A potential framework plant for the moderately cold regions. A densely leafy, evergreen tree with slender spines; it would require clipping. It has been used as a garden hedge (Smith 1966). There is one report of this very common plant having been the cause of one case of fatal human poisoning in Zululand (Sapeika 1944).

Scolopia zeyheri

A potential framework plant for the moderately cold regions. Clipping should encourage a dense, compact growth. Spines are usually present on the branchlets and coppice shoots, and may form large branched masses on the main trunk. It grows easily from seed and suckers (Palmer & Pitman 1972) and has been used as a garden hedge (Smith 1966).

Scutia myrtina (Rhamnaceae)

On its own, not very robust, but intensely thorny. It could be useful in the consolidation of a barrier, e.g. in which large and sturdy species such as *Rhus longispina* and *Dovyalis caffra* have been used. Clipping should encourage a denser and spinier growth form. It can be used as an entangler in humid, shady conditions. It has been used as a security hedge in India (Howes 1946). The astringent fruit ('droog-my-keel') is popular with country folk. It is known in the eastern Cape as a honey plant (Anderson *et al.* 1973).

Securinega virosa (Euphorbiaceae)

A multi-stemmed, bushy shrub that is often evergreen and can be used as a hedge (National Herbarium; Palmer & Pitman 1972).

Sesbania sesban (Fabaceae)

A fast-growing, short-lived species that usually grows near water, often on a river or streambank. It has been planted for shelter in coffee plantations at Port St Johns (National Herbarium, Pretoria).

Sideroxylon inerme (Sapotaceae)

This species has a rounded, spreading, evergreen crown. It has been used as a street tree in Port Shepstone (National Herbarium, Pretoria), it makes a magnificent shade tree and it can be used as a windbreak (King 1951). A bunch of flowers or a tree laden in flowers, however, may have an overwhelming and unpleasant smell (National Herbarium; Palmer & Pitman 1972).

Smilax kraussiana (Liliaceae)

A potential entangler. A shade-tolerant climber beset with hooked inconspicuous, thorns (Figure 25). It casts little shade.



FIGURE 25.—*Smilax kraussiana*. A potential entangler which tolerates shade. It has vicious thorns and casts little shade.

Smodingium argutum (Anacardiaceae)

It could be used as an ornamental, irritant filler. Apart from its irritant sap, it does not have the physical characteristics of a security barrier plant and its leafy crown in summer might shade out other species. It is fast-growing (Eliovson 1965). The sap can cause an allergic reaction in some people which results in a rash, blistering and swelling accompanied by itching and intense burning pain (Palgrave 1977; Watt & Breyer-Brandwijk 1962). Pollen may also cause intense irritation (Palmer & Pitman 1972). There is one unconfirmed report that the plant is poisonous to stock (National Herbarium, Pretoria). It is probably avoided by browsers. The fruits, each of which is a nut enclosed in a papery wing, are produced in attractive, dense heads.

Strelitzia (Strelitziaceae)

The *Strelitzia* species are ornamental, banana-like plants with large, handsome and unusual flowers that resemble the heads of cranes. Their leaves are large, up

to 2 m long, and are usually stripped into ribbons by the wind. The three tree species in southern Africa, *S. alba*, *S. caudata* and *S. nicolai* and possibly the related wild banana (*Ensete ventricosum*) have potential as ornamental screen plants for the moist, frost-free areas.

Synadenium cupulare (Euphorbiaceae)

A potential irritant filler. It should be used in combination with thorny framework species that can puncture the leaves and stems to release the latex. The latex is reputed to be poisonous and to cause intense skin irritation and blistering, and even blindness (Watt & Breyer-Brandwijk 1962). However, handled with care it is quite harmless (Palmer & Pitman 1972; White *et al.* 1941). It has, at least at one time, been cultivated and been much sought after for its interesting leaves and freely-blooming habit (White *et al.* 1941). The leaves and young branches are succulent, but the latter become woody with age. It is avoided by browsers (National Herbarium). It is used as a hedge plant in Venda (National Herbarium, Pretoria) and is planted on graves to keep animals away (Palgrave 1977).

Syzygium cordatum (Myrtaceae)

An evergreen tree with a dense, rounded crown. It makes a pleasing shade tree and can be used as a windbreak (Immelman *et al.* 1973). Moderately fast-growing (Poynton 1972).

Tamarix usneoides (Tamaricaceae)

This species grows in the very arid parts of southern Africa, including the Namib Desert, but is dependent on an ample supply of groundwater. It tolerates highly saline conditions. It could be useful as a low shelterbelt or informal hedge.

Tarchonanthus camphoratus (Asteraceae)

One of the most widespread and adaptable woody species in southern Africa. It is hardy to extreme heat, drought, cold, wind and salt spray. It makes an attractive garden tree and could be useful as an informal hedge and low shelterbelt. It is a valuable species for coastal areas for it flourishes where most other species succumb in the direct path of salt sea-spray (Palmer & Pitman 1972). The whole plant — the wood, leaves and flowering heads — have a strong, aromatic, camphor-like smell on which the common name, camphor bush, is based. It is a declared invader plant in the Cape and Natal.

Tecomaria capensis (Bignoniaceae)

A very ornamental species and widely cultivated in South Africa as a trimmed hedge, as an informal hedge supported by a wall or fence and as a climber. It is evergreen except where the winters are very cold. It will stand some frost and is hardy to intense heat and aridity. It is fast-growing even in poor soil (Van der Spuy 1957). Its tubular, nectar-rich flowers are most attractive to sunbirds.

Terminalia prunioides (Combretaceae)

It could make a very strong and ornamental framework. It is usually multi-stemmed with a densely branching, spreading crown and branches that arch downwards (Figure 26). The branchlets are spine-tipped but ineffective. It competes strongly with other perennials and is

easily propagated from seed but grows slowly (Van Wyk, W.C.E. 1974). It is very attractive in flower and fruit. The flowers, however, have a heavy, sickly sweet scent that is particularly noticeable in the evening. The fruits remain on the tree for a long time. A road-island planting of this species, with its brilliant red fruits, and *Gardenia volkensii* with its large, white, showy flowers could provide an attractive colour scheme as well as an effective screen. It often grows in the poorest soils, such as brackish flats near rivers, or with underlying limestone, or dry, stony areas with shallow soil (National Herbarium, Pretoria; Van Wyk, P. 1974). It is suitable for the arid, frost-free areas.



FIGURE 26.—*Terminalia prunioides*. A very sturdy shrub with a densely branching, spreading crown and branches that arch downwards.

Trichilia emetica (Meliaceae)

The Natal mahogany is a luxuriant, evergreen tree with a short, erect trunk and a spreading, rounded and symmetrical crown that casts deep shade. The fruits are striking, greenish-yellow capsules that split open to expose black seeds, each of which is enveloped in a shiny bright orange to scarlet aril or outer covering. It is moderately fast-growing, about 0,6 m per annum (Poynton 1972) to fast-growing. A tree in a Pretoria garden grew 6 m in 9 years (Van Wyk, W.C.E. 1972). It makes a superb shade and ornamental tree and a moderately good windbreak (Immelman *et al.* 1973). The specific name of this species refers to its use as an emetic and purgative medicine. The leaf, bark and fruit cause severe gastro-intestinal irritation (Steyn 1934) and Watt (1950) states that the ingestion of a sufficient amount of the fruit and an excessive dosage of the purgative medicine may well result in poisonous effects in humans.

Turraea obtusifolia (Meliaceae)

This is one of the most attractive of all indigenous shrubs. It has a neat, rounded shape, sometimes branching just above ground level. It bears masses of sweetly-scented, white, gardenia-like flowers and the fruits are equally attractive, bursting open to reveal brilliant crimson-coloured seeds. It is recommended as an informal hedge or partition in a garden (Eliovson 1965). Like *Trichilia emetica* this species has also been used as an emetic and strong purgative (Watt & Breyer-Brandwijk 1962) and is regarded as being poisonous (Bryant 1909).

Umtiza listerana (Fabaceae)

It could make a sturdy, tough and very spiny framework plant for the hot and moist regions. The small flowers are produced in abundance, sometimes twice in one season.

Urtica lobulata (Urticaceae)

A potential irritant, short filler. It prefers shade and could be most effective in deterring intruders from crawling beneath the barrier where there are gaps. Irritant hairs located on the leaves and stem have a vicious sting which may last for several hours and may cause blistering. It is probably avoided by browsers.

Vepris undulata (= *Vepris lanceolata*) (Rutaceae)

A slow-growing, good timber tree that can be used as a windbreak (Poynton 1972).

Virgilia oroboides (Fabaceae)

This is one of South Africa's most beautiful flowering trees and one of the most delectably perfumed of all trees. It is very fast-growing, about one metre or more per annum (Poynton 1972), reaching full size in four to five years (Palgrave 1977), but it is short-lived. It may have to be replaced after about 15 to 18 years (Eliovson 1965). It has a low-branching habit and makes a moderately good windbreak (Poynton 1972). Its roots, however, are very shallow and spreading and it should not be exposed to strong winds (Eliovson 1965).

Widdringtonia cedarbergensis (Cupressaceae)

A picturesque, coniferous tree that has an erect, straight stem and cone-shaped crown when grown in dense stands, but in the open it forms a short, gnarled trunk and a spreading, rounded head (Immelman *et al.* 1973). It is sometimes grown for ornament in parks and gardens and can be used as a windbreak and a trimmed hedge (Immelman *et al.* 1973). It is slow-growing, about 0,3 m per annum or less (Poynton 1972).

Widdringtonia nodiflora (= *W. cupressoides*)

This species has a compact, symmetrical, cone-shaped crown. It is sometimes grown for ornament in parks and gardens and can be used as a trimmed hedge (Immelman *et al.* 1973). It is slow-growing, about 0,3 m per annum or less (Poynton 1972). It regenerates itself from coppice shoots after fire (National Herbarium, Pretoria).

Widdringtonia schwarzii

Under favourable conditions this species produces an erect, fairly straight trunk and a more or less columnar to cone-shaped crown. It is sometimes grown for ornament in parks and gardens and can be used as a windbreak and trimmed hedge (Immelman *et al.* 1973). It is slow-growing, about 0,3 m per annum or less (Poynton 1972).

Ximenia americana (Olacaceae)

Could be used as a short filler on the edge of a barrier where it will receive enough sunlight. Usually a multi-stemmed, densely branching and very spiny shrub. The branches are flexible and the shrub lacks rigidity and strength. It has been recommended as a hedge plant (Howes 1946). It is moderately fast-growing (National Herbarium, Pretoria). The fruit is fleshy, rather sour, but refreshing. It has been used to make beer (Palgrave 1977).

Ziziphus mucronata subsp. *mucronata* (Rhamnaceae)

One of the most widespread and adaptable woody species in southern Africa, growing on all types of soil and resistant to heat, drought and cold. It is sturdy, usually very thorny — the thorns occur in pairs of one straight and one hooked thorn — and has long, flexible, whippy branches. It usually opens up underneath and becomes very shady. It does not stand trimming well (Howes 1946). It is very easily raised from seed and cuttings (Cunliff 1959; Palmer & Pitman 1972; Von Breitenbach 1965) and grows moderately fast (Cunliff 1959). It has been used as a hedge in southern Africa (Howes 1946).

When well established, it forms a dense, impenetrable barrier (National Herbarium, Pretoria). The dead branches have also been used to make kraals to protect stock from wild animals. The fruits are eaten by all the tribal peoples of Africa, and a coffee substitute is made from the roasted seeds (Palmer & Pitman 1972). It produces a dark honey of good flavour (Anderson *et al.* 1973).

Ziziphus zeyheriana

A low-growing, very thorny plant that can be used on the periphery of a barrier where it will receive enough sunlight. It is suitable for the cold and dry regions.

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References

- ACOCKS, J.P.H. 1975. Veld types of South Africa. 2nd edn *Memoirs of the Botanical Survey of South Africa* No. 40.
- ALLEN, C.E.F. 1909. Hedges for farm and garden. *Rhodesia Agricultural Journal* 6: 683–686.
- ANDERSON, R.H., BUYS, B. & JOHANNMEIER, M.F. 1973. *Beekeeping in South Africa*. Department of Agricultural Technical Services, Bulletin No. 394.
- BANDS, D.P., BRITTON, P.E.N., GEERTSEMA, H., KRUGER, F.J., REYNECKE, P.G., VAN DER ZEL, D.W. & WALSH, B.N. 1973. *Guide to tree-planting: winter rainfall region*. Department of Forestry, Pamphlet No. 125.
- BEWS, J.W. 1917. The growth-forms of Natal plants. *Transactions of the Royal Society of South Africa* 5: 605–636.
- BRYANT, A.T. 1909. Zulu medicine and medicine-men. *Annals of the Natal Museum* 2, 1: 1–104.
- CARR, J.D. 1976. *South African Acacias*. Conservation Press, Johannesburg.
- CUNLIFF, K.M. 1959. Trees for tomorrow. *Trees of South Africa* 10, 4: 93–94.
- CUNLIFF, K.M. 1963. Trees for tomorrow. *Trees of South Africa* 15, 1: 19–22.
- DENYER, S. 1978. *African traditional architecture*. Heinemann, London.
- DE WINTER, B., VAHRMEIJER, J. & VON BREITENBACH, F. 1978. *The National List of Trees*. 2nd edn. Van Schaik, Pretoria.
- DRY, D.H. 1970. The hardy Bloubos. *Trees of South Africa* 22, 2: 50.
- DYER, R.A. 1959. *Freylinia tropica*. *Flowering Plants of Africa* 33: t. 1320.
- ELIOVSON, S. 1965. *South African wild flowers for the garden*. 4th edn. Timmins, Cape Town.
- FENN, J.A., KROMHOUT, C., COETZEE, J., MAREE, H.B. & VON GADOW, K. 1973. *Guide to tree-planting: eastern Cape*. Department of Forestry, Pamphlet No. 126.
- FENN, J.A., COETZEE, J., VON GADOW, K. & TARLTON, J. 1974. *Guide to tree-planting: Karoo*. Department of Forestry, Pamphlet No. 144.
- GIBBS RUSSELL, G.E., REID, C., VAN ROOY, J. & SMOOK, L. 1985. List of species of southern African plants, 2nd edn, Part 1. *Memoirs of the Botanical Survey of South Africa* No. 51.
- GIBBS RUSSELL, G.E., *et al.* in prep. List of species of southern African plants, 2nd edn, Part 2. *Memoirs of the Botanical Survey of South Africa*.
- HAIGH, H. & WILHELMIJ, H. 1973. *Guide to tree-planting: Natal*. Department of Forestry, Pamphlet No. 124.
- HARRISON, R.E. 1959. *Handbook of trees and shrubs for the southern hemisphere*. Angus & Robertson, Sydney.
- HENDERSON, L. 1983. Barrier plants in South Africa. *Bothalia* 14: 635–639.
- HENDERSON, L. & MUSIL, K.J. 1984. Exotic woody plant invaders of the Transvaal. *Bothalia* 15: 297–313.
- HENKEL, J.S. 1923. The planting and care of hedges. *Rhodesia Agricultural Journal* 20: 201–206.
- HOWES, F.N. 1946. Fence and barrier plants in warm climates. *Kew Bulletin* 2: 51–87.
- IMMELMAN, W.F.E., WICHT, C.L. & ACKERMAN, D.P. (eds) 1973. *Our green heritage*. Tafelberg, Cape Town.
- KEET, J.H., LACK, C.E., GREY, D.M. & SCHUTZ, C.J. 1978. *Guide to tree-planting: eastern Transvaal*. Department of Forestry, Pamphlet No. 146.
- KING, N.L. 1951. Tree-planting in South Africa. *Journal of the South African Forestry Association* 21: 1–102.
- MATTHEWS, J.W. no date. *A short guide to the cultivation of non-succulent South African plants*. Specialty Press of South Africa, Cape Town.
- MITCHELL, J. & ROOK, A. 1979. *Botanical dermatology. Plants and plant products injurious to the skin*. Greenglass, Vancouver.
- NATIONAL ACADEMY OF SCIENCES 1979. *Tropical legumes: resources for the future*. National Academy of Sciences, Washington D.C.
- NICHOLSON, H.B. 1970. Indigenous trees for the Natal south coast (Correspondence). *Trees of South Africa* 22, 3: 78.
- NOYES, H. 1913. The rubber industry in Natal. *Agricultural Journal of the Union of South Africa* 5: 706–713.
- OBERMEYER, A.A. 1962. *Duvernoia adhatodoides*. *Flowering Plants of Africa* 35: t. 1375.
- OBERMEYER, A.A. & STREY, R.G. 1969. A new species of *Raphia* from northern Zululand and southern Mozambique. *Bothalia* 10: 29–37.
- PALGRAVE, K.C. 1977. *Trees of southern Africa*. Struik, Cape Town.
- PALMER, E. & PITMAN, N. 1972. *Trees of southern Africa*. Balkema, Cape Town. 3 volumes.
- PHILLIPS, E.P. (ed.) 1943. *Gardenia cornuta*. *Flowering Plants of Southern Africa* 23: t. 918.
- POYNTON, R.J. 1971. A silvicultural map of southern Africa. *South African Journal of Science* 67, 2: 58–60.
- POYNTON, R.J. 1972. *Characteristics and uses of trees and shrubs*. Department of Forestry, Bulletin No. 39.
- REPUBLIC OF SOUTH AFRICA 1984. Proclamation of Conservation of Agricultural Resources Act, 1983 (Act 43 of 1983), No. R. 74, in *Government Gazette* Vol. 227, No. 9238.
- ROSS, J.H. 1975. Mimosoideae. In J.H. Ross, *Flora of Southern Africa* 16, 1: 69–73. Botanical Research Institute, Pretoria.
- SAPEIKA, N. 1944. Fatal human poisoning from plants in southern Africa. *Clinical Proceedings, Cape Town* 3, 6: 264–271.
- SEIGNOBOS, C. 1980. Des fortifications végétales dans la zone soudano-sahélienne (Tchad et Nord-Cameroun). *Cahiers*

- Orstom: Serie Sciences Humaines* 17, 3 & 4: 191–222.
- SIM, T.R. 1919. *Flowering trees and shrubs for use in South Africa*. Specialty Press of South Africa, Johannesburg.
- SKINNER, G.C. 1980. Eastern Cape shrubs. *Ehretia rigida*. *Eastern Cape Naturalist* 69: 17.
- SMITH, C.A. 1966. *Common names of South African plants*. The Government Printer, Pretoria.
- SPENCE, T. 1975. *Gardening with birds in southern Africa*. Purnell, Cape Town.
- STAPLETON, C.C. 1940. Cultivation of indigenous plants (Correspondence). *Journal of the South African Forestry Association* 5: 81–84.
- STEYN, D.G. 1934. *The toxicology of plants in South Africa*. Central News Agency, South Africa.
- STIRTON, C.H. (ed.) 1978. *Plant invaders, beautiful but dangerous*. The Department of Nature and Environmental Conservation of the Cape, Provincial Administration, Cape Town.
- THE STAFF OF THE LIBERTY HYDE BAILEY HORTORIUM 1977. *Hortus Third — a concise dictionary of plants cultivated in the United States and Canada*. Macmillan, New York.
- TREE SOCIETY OF SOUTHERN AFRICA 1964. *Trees and shrubs of the Witwatersrand*. Witwatersrand University Press, Johannesburg.
- VAN DER MERWE, W.H., METELERKAMP, B.R., LANGE, P.W., OWEN, D.L., ESTERHUYSE, C.J., WILSON, P.A.S., MULLER, D.J. & MAAS, G.S. 1978. *Guide to tree-planting: whole-year rainfall region*. Revised edn. Department of Forestry, Pamphlet No. 123.
- VAN DER SPUY, U. 1957. *Ornamental shrubs and trees for gardens in southern Africa*. Juta, Cape Town.
- VAN RENSBURG, A.D. 1973. *Shelterbelts and windbreaks in South Africa*. Department of Forestry, Pamphlet No. 118.
- VAN RENSBURG, A.D. 1975. *Guide to tree-planting: the Highveld and adjoining districts of the Transvaal, Orange Free State and Cape Province*. Department of Forestry, Pamphlet No. 163.
- VAN WYK, P. 1972. *Trees of the Kruger National Park*. Purnell, Cape Town.
- VAN WYK, P. 1974. *Trees of the Kruger National Park*. Purnell, Cape Town.
- VAN WYK, W.C.E. 1971. Bomeprag uit eie bodem. Die Huilboerboon. *Landbouweekblad*, 30 November, 1971, no. 1728.
- VAN WYK, W.C.E. 1972. Bomeprag uit eie bodem. Rooi-essenhout. *Landbouweekblad*, 4 January, 1972, no. 1734.
- VAN WYK, W.C.E. 1972a. Bomeprag uit eie bodem. 16. Kaapse Essenhout. *Landbouweekblad*, 12 December, 1972, no. 50.
- VAN WYK, W.C.E. 1973. Bomeprag uit eie bodem. 19. Tierhout. *Landbouweekblad*, 2 January, 1973, no. 1.
- VAN WYK, W.C.E. 1974. Bomeprag uit eie bodem. 40. Sterkbos. *Landbouweekblad*, 19 March, 1974, no. 11.
- VERDOORN, I.C. 1957. *Polygala myrtifolia*. *Flowering Plants of Africa* 32: t. 1259.
- VON BREITENBACH, F. 1965. *The indigenous trees of southern Africa*. The Government Printer, Pretoria.
- VON BREITENBACH, F. 1984. *National list of introduced trees*. Dendrological Foundation, Pretoria.
- WATT, J.M. 1950. The toxicity of *Trichilia emetica* Vahl. *Trees of South Africa* 2, 3: 4 & 20.
- WATT, J.M. & BREYER-BRANDWIJK, M.G. 1962. *The medicinal and poisonous plants of southern and eastern Africa*. 2nd edn. Livingstone, Edinburgh.
- WESSELS, N.O., LE ROUX, P.J., SHONE, A.K. & VERMEULEN, O.C. 1978. *Guide to tree-planting: northern Transvaal*. Department of Forestry, Pamphlet No. 211.
- WHITE, A., DYER, R.A. & SLOANE, B.L. 1941. *The succulent Euphorbiae (southern Africa)*. Abbey Press, Pasadena. 2 volumes.
- WICHT, H. 1962. *Palms for gardens in southern Africa*. Howard Timmins, Cape Town.
- WICHT, H. 1969. *The indigenous palms of southern Africa*. Howard Timmins, Cape Town.
- WILLIAMSON, J. no date. *Useful plants of Malawi*. The Government Printer, Zomba.
- WILLOUGHBY, F.B. 1918. Cattleproof hedges in Rhodesia. *Rhodesia Agricultural Journal* 15: 540–541.
- YEATES, J.S. 1942. *Farm trees and hedges*. Massey Agricultural College, Palmerston North, New Zealand.

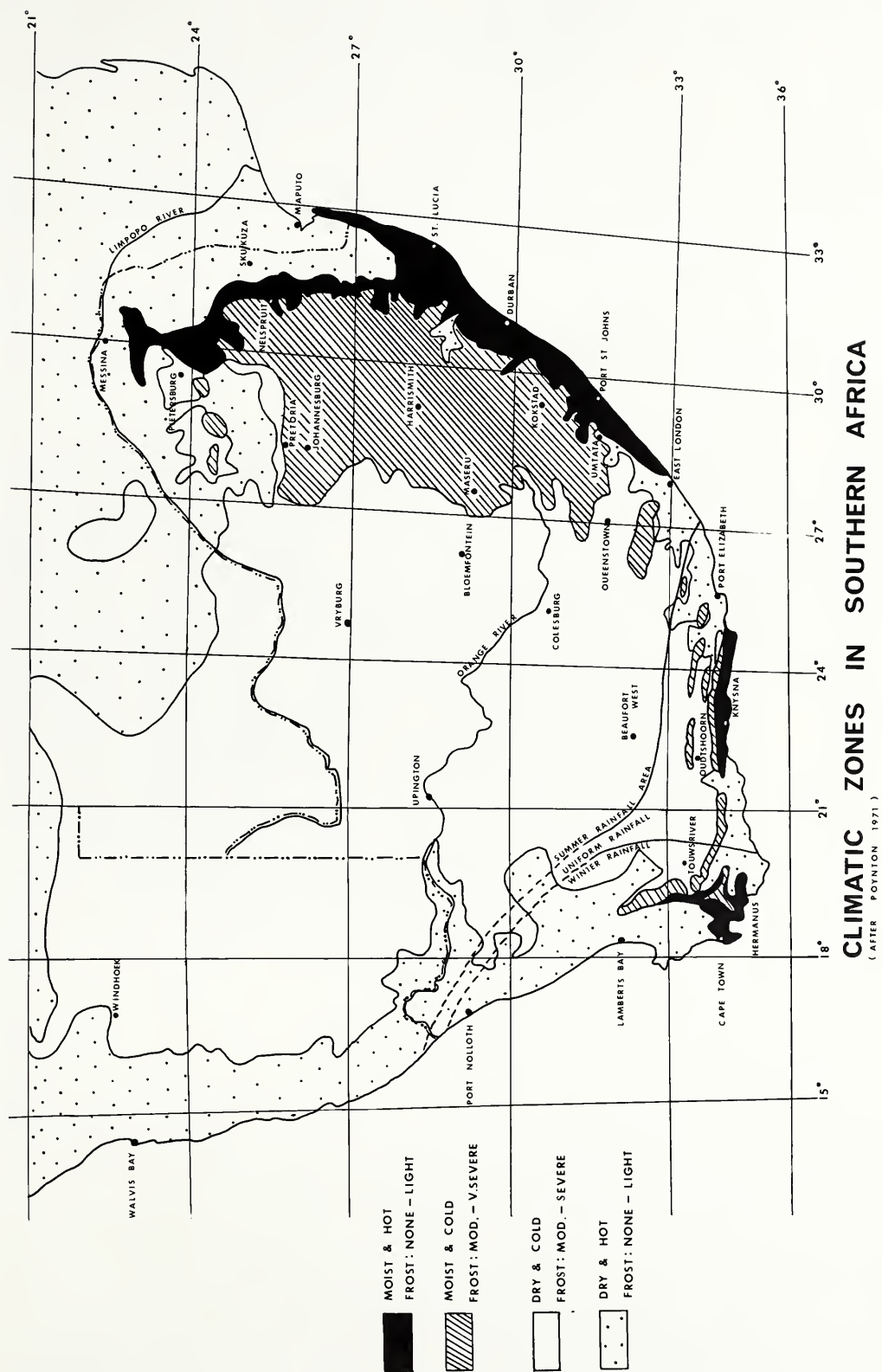


FIGURE 27.—Climatic zones in southern Africa.

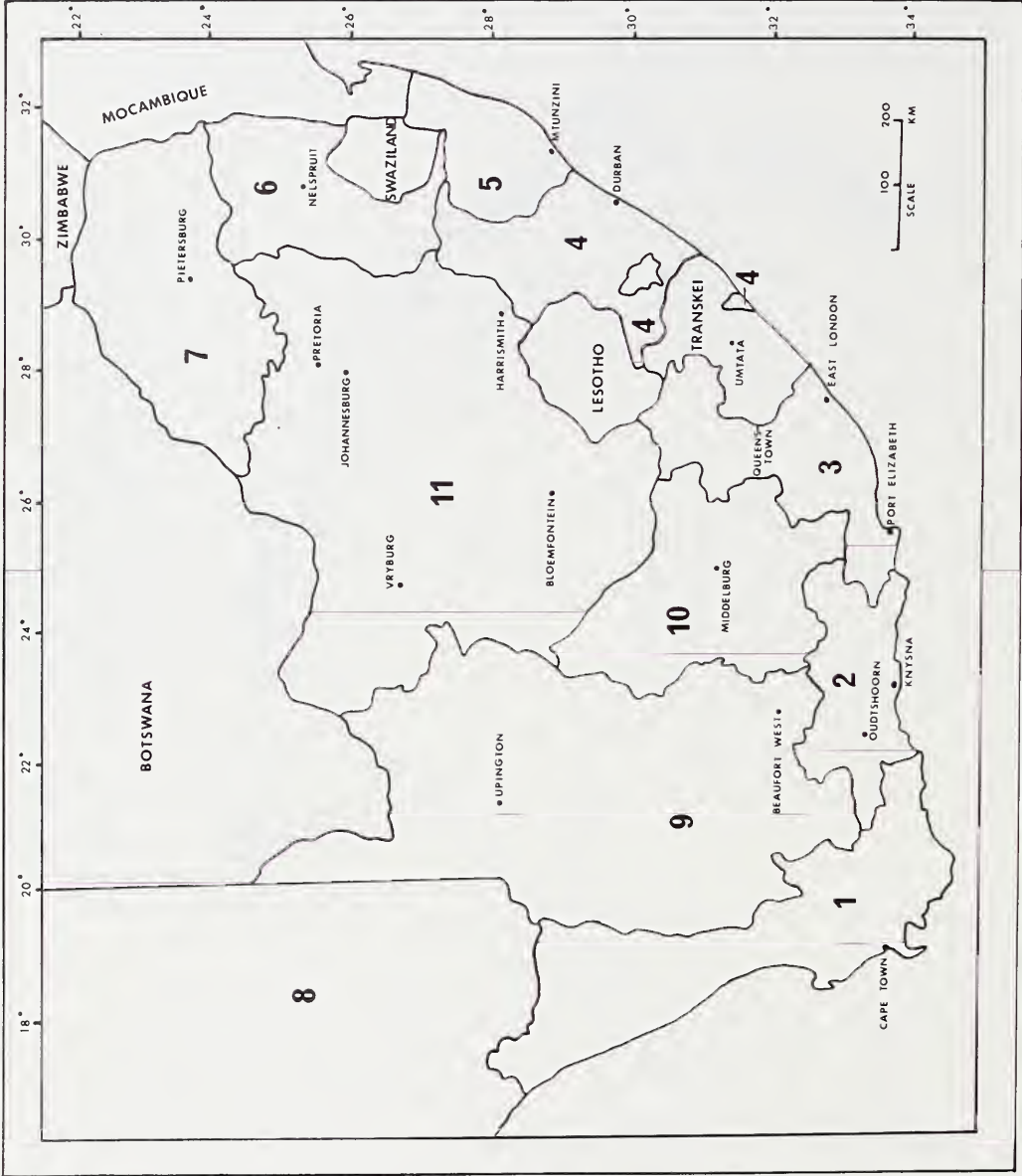


FIGURE 28.—Geographic regions of southern Africa: 1, winter rainfall region; 2, whole-year rainfall region; 3, eastern Cape; 4, Natal; 5, Zululand; 6, northern Transvaal; 7, northern Transvaal; 8, South West Africa/Namibia; 9, arid region; 10, Karoo; 11, the Highveld and adjoining districts of the Transvaal, Orange Free State and Cape Province.

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TABLE 1.—Recommended indigenous security hedge plants : barrier category; climatic and geographic regions of occurrence

Species name		Barrier category (see Fig. 6)		Climatic zone † (see Fig. 27)		Hardiness to drought and frost #		Geographic region (see Fig. 28)																								
Botanical	Common	Framework	Entangler	Short filler	Tall filler	Irritant	Hot and moist	Hot and dry	Cold and moist	Cold and dry	Frost hardy	Moderately frost hardy	Drought hardy	Moderately drought hardy																		
															1	2	3	4	5	6	7	8	9	10	11	Cultivated in Botanical Garden, Pretoria	Botswana	Zimbabwe	Mozambique	Swaziland	Transkei	Lesotho
<i>Acacia</i>																																
<i>ataxacantha</i>	Flame Thorn	x					x	x	x			x					x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>brevispica</i>	Prickly Thorn	x					x	x	x								x	x	x	x	x	x										
<i>dayi</i>	Corky Thorn	x					x	*	*		x						x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>erubescens</i>	Bluc Thorn	x					x	*	*		x	x	x				x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>exuvialis</i>	Flaky Thorn	x					x	*	*		x	x	x				x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>fleckii</i>	Plate Thorn	x					x				x	x	x				x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>grandicornuta</i>	Horned Thorn	x					x				x	x	x				x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>hebeclada</i> subsp. <i>hebeclada</i>	Candle Thorn	x					x	x	x		x	x	x				x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>karroo</i>	Sweet Thorn	x					x	x	x		x	x	x				x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>kraussiana</i>	Coast Climbing Thorn	x					x				x	x	x				x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>luederitzii</i> var. <i>retinens</i>	Belly Thorn	x					x				x	x	x				x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>mellifera</i> subsp. <i>detinens</i>	Black Thorn	x					x				x						x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>nigrescens</i>	Knob Thorn	x					x	*	*		x	x	x				x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>schweinfurthii</i>	River Climbing Thorn	x					x										x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>senegal</i> var. <i>leiorhachis</i>	Slender Three-hook Thorn	x					x										x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>senegal</i> var. <i>rostrata</i>	Three-hook Thorn	x					x										x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>tortilis</i> subsp. <i>heteracantha</i>	Umbrella Thorn	x					x										x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>Aloe</i>																																
<i>arborescens</i>	Krantz Aloe	x					x	x	x								x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>Azima</i>																																
<i>tetracantha</i>	Needle Bush	x					x										x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>Balanites</i>																																
<i>maughamii</i>	Green Thorn						x	x	x								x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>Caesalpinia</i>																																
<i>bonduc</i>	Ash-coloured Nicker (Smith 1966)	x					x										x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>Capparis</i>																																
<i>fascicularis</i>		x					x	x	x								x	x	x	x	x	x		x	x	x	x	x	x	x	x	
<i>sepiaria</i>	Wild Caper Bush	x	x				x	x	x			x					x	x	x	x	x	x		x	x	x	x	x	x	x	x	

† Climatic zone : where a species occurs naturally; * a species cultivated outside of its natural distribution; • in moist localities only; # species hardiness to drought and frost will give an indication of its suitability to other zones.

TABLE 1.— Recommended indigenous security hedge plants : barrier category; climatic and geographic regions of occurrence (continued)

Species name		Barrier category (see Fig. 6)		Climatic zone † (see Fig. 27)		Hardiness to drought and frost #		Geographic region (see Fig. 28)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
Botanical	Common	Framework	Entangler	Short filler	Tall filler	Irritant	Hot and moist	Hot and dry	Cold and moist	Cold and dry	Frost hardy	Moderately frost hardy	Drought hardy	Moderately drought hardy	Geographic region (see Fig. 28)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
															1	2	3	4	5	6	7	8	9	10	11	Highveld	Cultivated in Botanical Garden, Pretoria	Botswana	Zimbabwe	Mozambique	Swaziland	Lesotho																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
<i>Capparis tomentosa</i>	Woolly Caper Bush	x	x				x	x				x				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

† Climatic zone : where a species occurs naturally; * a species cultivated outside of its natural distribution; • in moist localities only; # species hardiness to drought and frost will give an indication of its suitability to other zones.

TABLE 1.—Recommended indigenous security hedge plants: barrier category; climatic and geographic regions of occurrence (continued)

Species name		Barrier category (see Fig. 6)		Climatic zone† (see Fig. 27)		Hardiness to drought and frost #		Geographic region (see Fig. 28)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
Botanical	Common	Framework		Entangler		Short filler		Irritant		Hot and moist		Hot and dry		Cold and moist		Cold and dry		Frost hardy		Moderately frost hardy		Drought hardy		Moderately drought hardy		Winter rainfall		Whole-year rainfall		Eastern Transvaal		Northern Transvaal		South West Africa		Arid region		Karoo		Highveld		Cultivated in Botanical Garden, Pretoria		Botswana		Zimbabwe		Mozambique		Swaziland		Transkei		Lesotho																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
		Frame	work	Short	filler	Tall	filler	Hot	moist	Hot	dry	Cold	moist	Cold	dry	Frost	hardy	Moderately	frost hardy	Drought	hardy	Moderately	drought hardy	Winter	rainfall	1	2	3	4	5	6	7	8	9	10	11	Highveld	Cultivated in Botanical Garden, Pretoria	Botswana	Zimbabwe	Mozambique	Swaziland	Transkei	Lesotho																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																						
<i>Maytenus heterophylla</i>	Common Spike-thorn	x						x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

† Climatic zone : where a species occurs naturally; * a species cultivated outside of its natural distribution; • in moist localities only; # species hardiness to drought and frost will give an indication of its suitability to other zones.

TABLE 1.—Recommended indigenous security hedge plants : barrier category; climatic and geographic regions of occurrence (continued)

Species name			Barrier category (see Fig. 6)		Climatic zone † (see Fig. 27)		Hardiness to drought and frost #		Geographic region (see Fig. 28)																							
Botanical			Common																													
			Framework	Entangler	Short filler	Irritant	Hot and moist	Hot and dry	Cold and moist	Cold and dry	Frost hardy	Moderately frost hardy	Drought hardy	Moderately drought hardy	1	2	3	4	5	6	7	8	9	10	11	Cultivated in Botanical Garden, Pretoria	Botswana	Zimbabwe	Mozambique	Swaziland	Transkei	Lesotho
Pterolobium stellatum			x				x	•							x					x					x							
Putterlickia pyracantha			x				x	x	x		x				x					x												
Rhous verrucosa			x		x		x	x							x					x												
Rhus ciliata			x							x																						
guenzii			x				x	x																								
longispina			x				x	x																								
pyroides			x				x	x	x																							
refracta			x				x	x																								
Rubus																																
ludwigii																																
pinnatus				x			x	x																								
rigidus				x			x	x																								
Sceloporia							x	x																								
flanaganii			x				x	x																								
mundii			x				x	x																								
zeyheri			x				x	x																								
Scutia			x				x	x																								
myrtina			x	x	x		x	x																								
Smilax							x	x																								
kraussiana				x			x								*																	
Snoddingium							x	x																								
argutum							x	x																								
Synadenium							x	x																								
cupulare							x	x																								
Terminalia							x	x																								
prunioides			x				x	x																								

† Climatic zone : where a species occurs naturally; * a species cultivated outside of its natural distribution; • in moist localities only; # species hardiness to drought and frost will give an indication of its suitability to other zones.

TABLE 1.— Recommended indigenous security hedge plants : barrier category; climatic and geographic regions of occurrence (continued)

Species name		Barrier category (see Fig. 6)		Climatic zone † (see Fig. 27)		Hardiness to drought and frost #		Geographic region (see Fig. 28)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
Botanical	Common	Framework	Entangler	Short filler	Tall filler	Irritant	Hot and moist	Hot and dry	Cold and moist	Cold and dry	Frost hardy	Moderately frost hardy	Drought hardy	Moderately drought hardy	Winter rainfall																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
															1	2	3	4	5	6	7	8	9	10	11	Cultivated in Botanical Garden, Pretoria	Botswana	Zimbabwe	Mozambique	Swaziland	Transkei	Lesotho																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
<i>Umtiza</i>		x					x								x																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											

† Climatic zone : where a species occurs naturally; * a species cultivated outside of its natural distribution; • in moist localities only; # species hardiness to drought and frost will give an indication of its suitability to other zones.

TABLE 2.—Recommended indigenous security hedge plants : species descriptions and miscellaneous information

Species name	Description						Miscellaneous																									
	Woody-ness	Life form	Height	Foliage			Flowers and fruits	Armature (thorns)		Propaga-tion	Substrate, soil and moisture #																					
				Average (m)	Maximum (m)	Dark green		Light green	Grey-green		Evergreen	Deciduous	Colour of (F)lowers — scented (S) and (F)ruits — edible (E)	Always armed	Sometimes armed	Hooked	Average length (cm)	From seed	From cuttings	From truncheons	Stony	Beach dune	Desert dune	Other deep sand	Clay	Brack	Calcrete	Laterite	Poorly-drained	Eroded	Other †	
<i>Acacia</i>	Succulent	Tree																														
<i>ataxacantha</i>	x	x	3-5	15	x	x	x	x	x	x	x	Fls cream, S; Frs red		x		<1				x	x	x		x				x	x		1	
<i>brevispica</i>	x	x	2-3	8	x	x	x	x	x	x	x	Fls cream, S		x		<1				x	x	x		x				x	x			
<i>davyi</i>	x	x	2-3	12	x	x	x	x	x	x	x	Fls yellow		x		<1	1-3			x	x	x		x								
<i>erubescens</i>	x	x	3-5	9	x	x	x	x	x	x	x	Fls cream, S		x		<1				x	x	x		x								
<i>exuvialis</i>	x	x	2-3	5	x	x	x	x	x	x	x	Fls yellow, S		x		<1	1-3			x	x	x		x								
<i>fleckii</i>	x	x	2-3	10	x	x	x	x	x	x	x	Fls cream, S		x		<1				x	x	x		x								
<i>grandicornuta</i>	x	x	3-6	15	x	x	x	x	x	x	x	Fls cream, S		x		1-3	3-6			x	x	x		x								
<i>hebeclada</i> subsp. <i>hebeclada</i>	x	x	2-3	8	x	x	x	x	x	x	x	Fls cream, S; Frs grey		x		1-3	1-3			x	x	x		x							1, 3	
<i>karoo</i>	x	x	5-7	22	x	x	x	x	x	x	x	Fls yellow, S		x		1-3	4			x	x	x		x							1, 5	
<i>kraussiana</i>	x	x	3-5	15	x	x	x	x	x	x	x	Fls cream		x		<1				x	x	x		x							8?	
<i>luederitzii</i> var. <i>retinens</i>	x	x	3-5	11	x	x	x	x	x	x	x	Fls cream, S		x		<1				x	x	x		x							1	
<i>melifera</i> subsp. <i>detinens</i>	x	x	3-4	9	x	x	x	x	x	x	x	Fls cream, S		x		<1				x	x	x		x							1	
<i>nigrescens</i>	x	x	8-10	23	x	x	x	x	x	x	x	Fls cream, S		x		<1				x	x	x		x							8?	
<i>schweinfurthii</i>	x	x	3-5	15	x	x	x	x	x	x	x	Fls cream, S		x		<1				x	x	x		x							8?	
<i>senegal</i> var. <i>leiorhachis</i>	x	x	5-8	17	x	x	x	x	x	x	x	Fls cream, S		x		<1				x	x	x		x							1	
<i>senegal</i> var. <i>rostrata</i>	x	x	2-3	9	x	x	x	x	x	x	x	Fls cream, S		x		<1				x	x	x		x							1, 3?	
<i>torilis</i> subsp. <i>heteracantha</i>	x	x	5-8	20	x	x	x	x	x	x	x	Fls cream, S		x		<1	3-6			x	x	x		x								
<i>Aloe</i>																				x												
<i>arborescens</i>	x	x	2-3	4			x	x				Frs red																				
<i>Azima</i>																																
<i>tetracantha</i>	x	x	1-3	8			x	x						x		2				x	x	x		x							1, 4, 5, 7	
<i>Balanites</i>																																
<i>maughamii</i>	x	x	8-12	20	x						x			x		3-6				x	x	x		x							3	
<i>Caesalpinia</i>																																
<i>bonduc</i>	x		2-6	*			x	x				Fls yellow; Frs brown		x		<1	<1			x											5	
<i>Capparis</i>																																
<i>fascicularis</i>	x	x	*	10	x	x	x	x				Fls white, S		x		<1				x	x	x		x							1, 5?	
<i>sepiaria</i>	x	x	2-3	6	x	x	x	x				Fls white		x		<1				x	x	x		x							1, 2, 5, 8?	
<i>tomentosa</i>	x	x	3-5	11	x	x	x	x				Frs white, S; Frs orange		x		<1															1, 3, 8?	

† 1, ability to coppice; 2, responds to trimming; 3, poisonous; 4, irritant; 5, resists sea winds; 6, shade tolerant; 7, partially shade tolerant; 8, browse-resistant. * Insufficient data. # Only tolerance of 'adverse' and not optimal conditions are included. A species tolerance of any of these 'adverse' conditions may only be marginal but it has been noted. Bold type used under the heading Life form = most frequently encountered form; Height, Foliage = the usual condition; other columns = well-developed characteristics.

TABLE 2.—Recommended indigenous security hedge plants : species descriptions and miscellaneous information (continued)

Species name	Description						Miscellaneous															
	Woody-ness	Life form	Height Average (m) Maximum (m)	Foliage				Flowers and fruits Colour of (Fl)owers — scented (S) and (Fr)uits — edible (E)	Armature (thorns)		Propaga- tion	Substrate, soil and moisture #										
				Dark green	Light green	Grey-green	Evergreen		Deciduous	Always armed		Sometimes armed	Hooked Average length (cm)	From seed	From cuttings	From trunks	Stony	Beach dune	Desert dune	Other deep sand	Clay	Brack
<i>Carissa</i> <i>bispinosa</i> var. <i>bispinosa</i> <i>haematocarpa</i> <i>macrocarpa</i> <i>tetramera</i> <i>Cassinopsis</i> <i>ilicifolia</i> <i>Catunaregam</i> <i>spinosa</i> <i>Chaetachme</i> <i>aristata</i> <i>Commiphora</i> <i>africana</i> <i>glandulosa</i> <i>pyracanthoides</i> <i>schimperi</i> <i>woodii</i> <i>Dalbergia</i> <i>armata</i> <i>Dichrostachys</i> <i>cinerea</i> subsp. <i>africana</i> <i>Dovyalis</i> <i>caffra</i> <i>rhannoides</i> <i>zeyheri</i> <i>Ehretia</i> <i>rigida</i>	Succulent 																					

† 1, ability to coppice; 2, responds to trimming; 3, poisonous; 4, irritant; 5, resists sea winds; 6, shade tolerant; 7, partially shade tolerant; 8, browse-resistant. * Insufficient data. # Only tolerance of 'adverse' and not optimal conditions are included. A species tolerance of any of these 'adverse' conditions may only be marginal but it has been noted. Bold type used under the heading Life form = most frequently encountered form; Height, Foliage = the usual condition; other columns = well-developed characteristics.

TABLE 2.— Recommended indigenous security hedge plants : species descriptions and miscellaneous information (continued)

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	Woodiness	Life form	Height	Foliage			Flowers and fruits	Armature (thorns)		Propagation	Substrate, soil and moisture #																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
				Average (m)	Maximum (m)	Dark green		Light green	Grey-green		Deciduous	Colour of (Fl)owers — scented (S) and (Fr)uits — edible (E)	Always armed	Sometimes armed	Hooked	Average length (cm)	From seed	From cuttings	From truncheons	Stony	Beach dune	Desert dune	Other deep sand	Clay	Calcrete	Latente	Poorly-drained	Eroded	Other +																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
<i>Entada</i>	x		2-10	30	x																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									

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TABLE 2.— Recommended indigenous security hedge plants : species descriptions and miscellaneous information (continued)

Species name	Description					Miscellaneous																									
	Woodi- ness	Life form	Height	Foliage			Flowers and fruits	Armature (thorns)		Propaga- tion	Substrate, soil and moisture #																				
				Average (m)	Maximum (m)	Dark green		Light green	Grey-green		Evergreen	Deciduous	Colour of (F)lowers — scented (S) (F)ruits — edible (E)	Always armed	Sometimes armed	Average length (cm)	Hooked	Straight	From seed	From cuttings	From truncheons	Stony	Beach dune	Desert dune	Other deep sand	Clay	Brack	Calcrete	Latente	Poorly-drained	Eroded
<i>Maytenus heterophylla</i>	x	Tree	2-4	9	x	x	x	x	x	Fls cream	x	3-6	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	1,4,5,7,8?	
<i>polycantha</i>	x	Shrub	1.5-3	4	x	x	x	x	x	Fls white	x	3	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	1,7	
<i>senegalensis</i>	x	Shrub	2-3	8	x	x	x	x	x	Fls red	x	3	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	7, 8?	
<i>Mucuna coriacea</i> subsp. <i>irritans</i>	x	Scandent shrub	3?	*	x	x	x	x	x	Fls red	x																			4, 7, 8?	
<i>Nylandtia spinosa</i>	x	Shrub	1-1.5	2.5	x	x	x	x	x	Fls S	x	<1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	1, 4, 7, 8	
<i>Obetia tenax</i>	x	Shrub	3-5	16	x	x	x	x	x	Fls white, S; Frs yellow, E	x	3-6	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	6	
<i>Oncoba spinosa</i>	x	Shrub	3-5	8	x	x	x	x	x	Fls yellow	x	1-3	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	8?	
<i>Parkinsonia africana</i>	x	Shrub	3-5	6	x	x	x	x	x	Fls cream; Frs orange, E	x	6	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	1, 7, 8	
<i>Phaeopitulum spinosum</i>	x	Shrub	1-2	6	x	x	x	x	x	Fls S	x	<1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	5, 7	
<i>Phoenix reclinata</i>	x	Shrub	3-5	10	x	x	x	x	x	Fls S	x	<1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	1, 7	
<i>Pisonia aculeata</i>	x	Shrub	*	18?	x	x	x	x	x	Fls S	x	<1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	7	
<i>Protasparagus aethiopicus</i>	x	Shrub	1-2	4	x	x	x	x	x	Fls S	x	<1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	1, 5, 7	
<i>africanus</i>	x	Shrub	1-2	3	x	x	x	x	x	Fls S	x	<1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	7	
<i>angusticladus</i>	x	Shrub	2-3	5	x	x	x	x	x	Fls S	x	<1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	1, 5, 7	
<i>capensis</i>	x	Shrub	0.2-0.6	2	x	x	x	x	x	Fls S	x	<1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	7	
<i>krebsianus</i>	x	Shrub	0.3-1	3	x	x	x	x	x	Fls S	x	<1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	7	
<i>laritinus</i>	x	Shrub	1-2	2	x	x	x	x	x	Fls S	x	<1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	7	
<i>racemosus</i>	x	Shrub	1-2	4	x	x	x	x	x	Fls cream, S; Frs red	x	<1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	7
<i>Pterolobium stellatum</i>	x	Shrub	3-5	10	x	x	x	x	x	Fls cream, S; Frs red	x	<1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	7

† 1, ability to coppice; 2, responds to trimming; 3, poisonous; 4, irritant; 5, resists sea winds; 6, shade tolerant; 7, partially shade tolerant; 8, browse-resistant. * Insufficient data. # Only tolerance of 'adverse' and not optimal conditions are included. A species tolerance of any of these 'adverse' conditions may only be marginal but it has been noted. Bold type used under the heading Life form = most frequently encountered form; Height, Foliage = the usual condition; other columns = well-developed characteristics.

TABLE 2.—Recommended indigenous security hedge plants : species descriptions and miscellaneous information (continued)

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				Average (m)	Maximum (m)	Dark green		Light green	Grey-green		Deciduous	Colour of (F)lowers — scented (S) and (F)ruits — edible (E)	Always armed	Sometimes armed	Average length (cm)	From seed	From cuttings	From truncheons	Stony	Beach dune	Desert dune	Other deep sand	Clay	Brack	Calcrete	Laterite	Poorly-drained	Eroded	Other †																																																																																																																																																																																																																																																																																																																																																																																																											
Woody	Succulent	Tree	Scandent shrub	Climber	Average (m)	Maximum (m)	Dark green	Light green	Grey-green	Deciduous	Colour of (F)lowers — scented (S) and (F)ruits — edible (E)	Always armed	Sometimes armed	Hooked	Average length (cm)	From seed	From cuttings	From truncheons	Stony	Beach dune	Desert dune	Other deep sand	Clay	Brack	Calcrete	Laterite	Poorly-drained	Eroded	Other †																																																																																																																																																																																																																																																																																																																																																																																																											
	x	x	2-3	5	x	x	x	x	x	x	Frs red	x	x	3-6	x	x	x	x	x	x	x	x	x	x	x	x	x	1, 4, 5, 7																																																																																																																																																																																																																																																																																																																																																																																																												
	x	x	2-3	6	x	x	x	x	x	x	Frs red	x	x	3-6	x	x	x	x	x	x	x	x	x	x	x	x	x	4, 5, 7																																																																																																																																																																																																																																																																																																																																																																																																												
	x	x	x	x	x	x	x	x	x	x	?	Fls yellow	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

† 1, ability to coppice; 2, responds to trimming; 3, poisonous; 4, irritant; 5, resists sea winds; 6, shade tolerant; 7, partially shade tolerant; 8, browse-resistant. ** Insufficient data; height variable, dependent on support available. # Only tolerance of 'adverse' and not optimal conditions are included. A species tolerance of any of these 'adverse' conditions may only be marginal but it has been noted. Bold type used under the heading Life form = most frequently encountered form; Height, Foliage = the usual condition; other columns = well-developed characteristics.

TABLE 2.— Recommended indigenous security hedge plants : species descriptions and miscellaneous information (continued)

Species name	Description							Miscellaneous				
	Woody-ness	Life form	Height	Foliage	Flowers and fruits	Armature (thorns)		Propaga-tion	Substrate, soil and moisture #			
	Woody	Tree Shrub Scandent shrub Climber	Average (m) Maximum (m)	Dark green Light green Grey-green Evergreen Deciduous	Colour of (F)lowers — scented (S) and (F)ruits — edible (E)	Always armed	Hooked Average length (cm) Straight	From seed From cuttings From truncheons	Stony Beach dune Desert dune Other deep sand Clay Brack Calcrete Laterite Poorly-drained Eroded			
<i>Ximenia americana</i>	x	x	1-2 6	x ?	Frs orange, E	x	1	x	x	x	x	1
<i>Ziziphus mucronata</i> subsp. <i>mucronata</i>	x	x	3-6 21	x x	Frs E	x	<1 1-3	x	x	x	x	7
<i>zeyheriana</i>	x	x	0.2-0.5 1	x ?	?	x	<1	x	x	x	x	7

† 1, ability to coppice; 2, responds to trimming; 3, poisonous; 4, irritant; 5, resists sea winds; 6, shade tolerant; 7, partially shade tolerant; 8, browse-resistant. * Insufficient data. # Only tolerance of 'adverse' and not optimal conditions are included. A species tolerance of any of these 'adverse' conditions may only be marginal but it has been noted. Bold type used under the heading Life form = most frequently encountered form; Height, Foliage = the usual condition; other columns = well-developed characteristics.

TABLE 3. — Recommended indigenous security hedge plants for trial in the hot and moist regions of southern Africa

Framework plants	Fillers
<ul style="list-style-type: none"> * <i>Carissa macrocarpa</i> * <i>Dovyalis caffra</i> * <i>Acacia ataxacantha</i> * <i>Flacourtia indica</i> <i>Phoenix reclinata</i> * <i>Acacia schweinfurthii</i> <i>Entada spicata</i> * <i>Capparis tomentosa</i> * <i>Pterolobium stellatum</i> * <i>Maclura africana</i> * <i>Oncoba spinosa</i> * <i>Acacia kraussiana</i> <i>Dovyalis rhamnoides</i> * <i>Aloe arborescens</i> 	<p>Short: <i>Carissa bispinosa</i> var. <i>bispinosa</i> <i>Carissa tetramera</i> <i>Azima tetracantha</i> <i>Putterlickia pyracantha</i> <i>Ximenia americana</i></p> <p>Tall: <i>Balanites maughamii</i></p> <p>Irritant: <i>Mucuna coriacea</i> subsp. <i>irritans</i> <i>Obetia tenax</i> <i>Synadenium cupulare</i> <i>Euphorbia cooperi</i> <i>Euphorbia ingens</i></p>
Entanglers	Fence reinforcers
<i>Scutia myrtina</i> <i>Capparis sepiaria</i> <i>Capparis fascicularis</i> <i>Smilax kraussiana</i> <i>Dalbergia armata</i> <i>Protasparagus racemosus</i> <i>Protasparagus larinicus</i>	<i>Acacia schweinfurthii</i> <i>Acacia ataxacantha</i> <i>Acacia kraussiana</i> <i>Entada spicata</i> <i>Pterolobium stellatum</i> <i>Capparis sepiaria</i> <i>Capparis tomentosa</i> <i>Pisonia aculeata</i>
Ornamental	
<p>Foliage, flowers and/or fruits attractive <i>Aloe arborescens</i> <i>Carissa macrocarpa</i> <i>Acacia ataxacantha</i> <i>Acacia schweinfurthii</i> <i>Acacia kraussiana</i> <i>Entada spicata</i> <i>Oncoba spinosa</i> Foliage and growth form attractive <i>Aloe arborescens</i> <i>Phoenix reclinata</i></p>	<p>Flowers and/or fruits attractive <i>Pterolobium stellatum</i> <i>Oncoba spinosa</i> <i>Gardenia amoena</i> <i>Gardenia volkensii</i> <i>Dovyalis caffra</i> <i>Capparis tomentosa</i> <i>Ehretia rigida</i> <i>Maytenus heterophylla</i> (flowers attractive but often have a strong unpleasant smell)</p>
Browse-resistant	
<i>Euphorbia cooperi</i> <i>Euphorbia ingens</i> <i>Euphorbia tirucalli</i>	<i>Capparis tomentosa</i> <i>Capparis sepiaria</i>

* Prior use as a hedge; □ species which maintain ground density the best.

TABLE 4. — Recommended indigenous security hedge plants for trial in the hot and dry regions of southern Africa

Framework plants	Fillers
<ul style="list-style-type: none"> □ ♦ <i>Euphorbia grandicornis</i> ♦ <i>Euphorbia cooperi</i> □ * <i>Commiphora pyracanthoides</i> □ * <i>Commiphora africana</i> □ * <i>Lycium afrum</i> □ * <i>Lycium ferocissimum</i> ♦ <i>Euphorbia tirucalli</i> ♦ <i>Euphorbia ingens</i> □ ♦ <i>Euphorbia grandialata</i> □ ♦ <i>Euphorbia virosa</i> □ * <i>Dovyalis caffra</i> □ * <i>Rhus longispina</i> □ + <i>Acacia luederitzii</i> var. <i>retinens</i> □ + <i>Acacia senegal</i> var. <i>rostrata</i> <i>Acacia grandicornuta</i> <i>Acacia erubescens</i> <i>Acacia mellifera</i> subsp. <i>detinens</i> <i>Acacia ataxacantha</i> + <i>Capparis tomentosa</i> + <i>Capparis sepiaria</i> □ <i>Lycium oxycarpum</i> □ + <i>Phaeoptilum spinosum</i> 	<p>Short: <i>Maytenus capitata</i> <i>Maytenus polyacantha</i> <i>Lycium ferocissimum</i> <i>Lycium hirsutum</i> <i>Lycium prunus-spinosa</i> <i>Carissa bispinosa</i> var. <i>bispinosa</i> <i>Carissa tetramera</i> <i>Carissa haematocarpa</i> <i>Commiphora pyracanthoides</i> <i>Commiphora africana</i> <i>Acacia hebeclada</i> subsp. <i>hebeclada</i> <i>Euphorbia grandicornis</i> <i>Azima tetracantha</i></p> <p>Tall: <i>Acacia nigrescens</i> <i>Acacia senegal</i> var. <i>leiorhachis</i> and other <i>Acacia</i> spp. <i>Balanites maughamii</i> <i>Lycium oxycarpum</i></p> <p>Irritant: <i>Obetia tenax</i> <i>Euphorbia grandicornis</i> <i>Euphorbia ledienii</i> <i>Euphorbia pseudocactus</i> <i>Euphorbia cooperi</i> <i>Euphorbia tirucalli</i> <i>Euphorbia virosa</i> <i>Euphorbia ingens</i> <i>Mucuna coriacea</i> subsp. <i>irritans</i> (in moist places)</p>
Entanglers	Fence reinforcers
<i>Capparis sepiaria</i> <i>Capparis fascicularis</i> <i>Protasparagus</i> spp. <i>Scutia myrtina</i>	<i>Capparis tomentosa</i> <i>Capparis sepiaria</i> <i>Acacia ataxacantha</i> <i>Scutia myrtina</i> <i>Rhus guezinzi</i>
Browse-resistant	
<i>Euphorbia grandicornis</i> <i>Euphorbia cooperi</i> <i>Euphorbia ingens</i> <i>Euphorbia grandialata</i>	<i>Euphorbia virosa</i> <i>Acacia luederitzii</i> var. <i>retinens</i> <i>Capparis</i> spp. <i>Maytenus</i> spp.
Ornamental	
<p>Flowers and/or fruits attractive <i>Terminalia prunioides</i> (flowers and fruits attractive, but flowers have a very strong, sickly sweet smell) <i>Acacia ataxacantha</i> <i>Dovyalis caffra</i> <i>Putterlickia pyracantha</i> <i>Pterolobium stellatum</i> <i>Oncoba spinosa</i></p> <p>Attractive growth form and/or foliage <i>Euphorbia cooperi</i> <i>Euphorbia tirucalli</i> <i>Euphorbia grandialata</i> <i>Euphorbia grandicornis</i> <i>Aloe arborescens</i></p>	<p>Flowers attractive: All the <i>Acacia</i> spp. <i>Gardenia volkensii</i> <i>Ehretia rigida</i> <i>Parkinsonia africana</i> <i>Carissa haematocarpa</i> <i>Capparis tomentosa</i> <i>Maytenus heterophylla</i> (flowers attractive, but often have a strong, unpleasant smell)</p> <p>Attractive growth form and/or foliage <i>Phoenix reclinata</i> (in moist places) <i>Acacia schweinfurthii</i> (in moist places) <i>Acacia ataxacantha</i></p>

* successful security hedges; □ species which maintain ground density the best; + occasionally browsed; ♦ browse-resistant.

TABLE 5.—Recommended indigenous security hedge plants for trial in the cold and moist regions of southern Africa

Framework plants	
* □ <i>Dovyalis caffra</i>	<i>Scolopia flanaganii</i>
* <i>Dovyalis zeyheri</i>	<i>Cassinopsis ilicifolia</i>
* <i>Scolopia zeyheri</i>	<i>Acacia fleckii</i>
* <i>Ehretia rigida</i>	<i>Acacia tortilis</i> subsp. <i>heteracantha</i>
* <i>Rhus pyroides</i>	<i>Acacia davyi</i>
* <i>Acacia karroo</i>	<i>Acacia exuvialis</i>
* <i>Maytenus heterophylla</i>	* <i>Scutia myrtina</i>
* <i>Scolopia mundii</i>	* <i>Ziziphus mucronata</i> subsp. <i>mucronata</i>
Fillers	Entanglers
Short:	<i>Protasparagus larinicus</i>
<i>Maytenus polyacantha</i>	<i>Protasparagus krebsianus</i>
<i>Ziziphus zeyheriana</i>	<i>Protasparagus aethiopicus</i>
<i>Scutia myrtina</i>	<i>Scutia myrtina</i>
<i>Carissa bispinosa</i> var. <i>bispinosa</i>	<i>Rubus rigidus</i>
<i>Rubus ludwigii</i>	<i>Rubus pinnatus</i>
Irritant:	
<i>Urtica lobulata</i>	
<i>Smodingium argutum</i>	
Fence reinforcers	Browse-resistant
<i>Cassinopsis ilicifolia</i>	<i>Maytenus heterophylla</i>
<i>Rubus pinnatus</i>	
<i>Rubus rigidus</i>	
<i>Scutia myrtina</i>	
Ornamental	
Flowers and/or fruits and foliage attractive:	Flowers and/or fruits attractive:
<i>Smodingium argutum</i>	<i>Acacia</i> spp.
<i>Scolopia mundii</i>	<i>Dovyalis caffra</i>
<i>Cassinopsis ilicifolia</i>	<i>Dovyalis zeyheri</i>
<i>Aloe arborescens</i>	<i>Ehretia rigida</i>
<i>Acacia ataxacantha</i>	<i>Maytenus heterophylla</i> (flowers attractive but often have a strong, unpleasant smell)

* prior use as a hedge; □ species which maintain ground density the best.

TABLE 6.—Recommended indigenous security hedge plants for trial in the cold and dry regions of southern Africa

Framework plants	Fillers
□ * <i>Lycium afrum</i>	Short:
* <i>Lycium ferocissimum</i>	<i>Lycium afrum</i>
□ * <i>Lycium oxycarpum</i>	<i>Lycium ferocissimum</i>
□ * <i>Dovyalis caffra</i>	<i>Lycium hirsutum</i>
* <i>Ehretia rigida</i>	<i>Lycium prunus-spinosa</i>
<i>Rhus ciliata</i>	<i>Maytenus polyacantha</i>
* <i>Putterlickia pyracantha</i>	<i>Putterlickia pyracantha</i>
□ <i>Phaeoptilum spinosum</i>	<i>Acacia hebeclada</i> subsp. <i>hebeclada</i>
□ <i>Lycium hirsutum</i>	<i>Phaeoptilum spinosum</i>
□ * <i>Commiphora pyracanthoides</i>	<i>Nylandtia spinosa</i>
* <i>Ziziphus mucronata</i> subsp. <i>mucronata</i>	Irritant:
* <i>Maytenus heterophylla</i>	<i>Euphorbia avasmontana</i>
● * <i>Acacia karroo</i>	Tall:
□ ● <i>Acacia mellifera</i> subsp. <i>detinens</i>	<i>Parkinsonia africana</i>
● <i>Dichrostachys cinerea</i> subsp. <i>africana</i>	<i>Lebeckia macrantha</i>
	<i>Lycium oxycarpum</i>
Entanglers	Browse-resistant
<i>Protasparagus larinicus</i>	<i>Euphorbia avasmontana</i>
<i>Protasparagus racemosus</i>	<i>Maytenus heterophylla</i>
<i>Protasparagus aethiopicus</i>	<i>Phaeoptilum spinosum</i> ?
	<i>Commiphora pyracanthoides</i> ?
Ornamental	
Flowers or fruits attractive:	Attractive foliage:
<i>Acacia</i> spp.	<i>Smodingium argutum</i>
<i>Ehretia rigida</i>	Attractive growth form:
<i>Rhus ciliata</i>	<i>Euphorbia avasmontana</i>
<i>Parkinsonia africana</i>	
<i>Maytenus heterophylla</i> (flowers attractive but often have a strong, unpleasant smell)	
<i>Dichrostachys cinerea</i> subsp. <i>africana</i>	
<i>Dovyalis caffra</i>	
<i>Putterlickia pyracantha</i>	

* previous use as a hedge; □ species which maintain ground density the best; ● danger: these species may spread.

TABLE 7.—Recommended indigenous garden hedge and windbreak plants : climatic and geographic regions of occurrence

Species name		Barrier category	Climatic zone* (see Fig. 27)			Hardiness to drought and frost#			Geographic region (see Fig. 28)																				
Botanical	Common		Hot and moist	Hot and dry	Cold and moist	Cold and dry	Frost hardy	Moderately frost hardy	Drought hardy	Moderately drought hardy	1	2	3	4	5	6	7	8	9	10	11	Karoo	Highveld	Cultivated in Botanical Garden, Pretoria	Botswana	Zimbabwe	Mozambique	Swaziland	Lesotho
		Windbreak																											
		Garden hedge																											
<i>Acacia</i>																													
<i>ataxacantha</i>	Flame Thorn	x	x	x	x	x		x			x	x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>karroo</i>	Sweet Thorn		x	x	x	x		x																					
<i>schweinfurthii</i>	River Climbing Thorn	x	x	x	x	x																							
<i>tortilis</i> subsp. <i>heteracantha</i>	Umbrella Thorn	x	x	x	x	x		x																					
<i>Adenium</i>																													
<i>multiflorum</i>	Impala Lily	x		x					x																				
<i>Agathosma</i>																													
<i>crenulata</i>	Buchu	x	x																										
<i>Aloe</i>																													
<i>arborescens</i>	Krantz Aloe	x	x	x	x																								
<i>castanea</i>	Cat's-Tail Aloe	x	x	x																									
<i>Andrachne</i>																													
<i>ovalis</i>	Bastard Lightning Bush	x	x	x	x																								
<i>Apodytes</i>																													
<i>dimidiata</i>	White Pear	x	x	•	x			x																					
<i>Barleria</i>																													
<i>rotundifolia</i>		x	x	x	x																								
<i>Bauhinia</i>																													
<i>galpinii</i>	Pride-of-De Kaap	x	x	x	*	*		x						*	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>tomentosa</i>	Bush Neat's Foot	x	x	x	*	*		x				*		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Bequaertiodendron</i>																													
<i>magalismontanum</i>	Transvaal Milkplum	x	x	x	x			x																					
<i>Brabejum</i>																													
<i>stellatijolium</i>	Wild Almond	x	x	•	*			x																					
<i>Brachylaena</i>																													
<i>discolor</i>	Forest Silver Tree	x	x	x				x																					
<i>nerifolia</i>	Water White Els	x	x	•	x			x																					
<i>Buddleja</i>																													
<i>auriculata</i>	Weeping Sage	x	x	x	x		x																						

† Climatic zone : where a species occurs naturally; * a species cultivated outside of its natural distribution; • in moist localities only; # species hardiness to drought and frost will give an indication of its suitability to other zones

TABLE 7.—Recommended indigenous garden hedge and windbreak plants : climatic and geographic regions of occurrence (continued)

Species name		Barrier category	Climatic zone† (see Fig. 27)			Hardiness to drought and frost #		Geographic region (see Fig. 28)																						
Botanical	Common		Hot and moist	Hot and dry	Cold and moist	Cold and dry	Frost hardy	Moderately frost hardy	Drought hardy	Moderately drought hardy	1	2	3	4	5	6	7	8	9	10	11	Karoo	Highveld	Cultivated in Botanical Garden, Pretoria	Botswana	Zimbabwe	Mozambique	Swaziland	Transkei	Lesotho
<i>Buddleia salviifolia</i>	Sagewood	x	x	•	x	•	x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Burchellia bubalina</i>	Wild Pomegranate	x	x		x					x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Buxus</i>																														
<i>macowanii</i>	Cape Box	x	x																											
<i>Canthium obovatum</i>	Quar	x	x	x																										
<i>Carissa</i>																														
<i>bispinosa</i>	Num-num (Palgrave 1977)	x	x	x	x	x		x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>haematocarpa</i>	Karoo Num-num	x	x	x	x	x		x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>macrocarpa</i>	Large Num-num	x	x	x	x	x		x			x	x	x	x	x	*	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>tetramera</i>		x	x	x	x	x		x			x	x	x	x	x															
<i>Cassine</i>																														
<i>reticulata</i>		x	x	x	x	x					x	x																		
<i>Cassinopsis</i>		x																												
<i>ilicifolia</i>	Lemon Thorn	x	x	x	x	x		x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>tinifolia</i>	False Lemon Thorn	x	x	x	x	x					x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Chrysanthemoides</i>																														
<i>monilifera</i>	Bush-tick Berry	x	x	x	x	x		x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Cordia</i>																														
<i>radis</i>	Small Bone-apple	x	x	x	x	x					x																			
<i>Coleonema album</i>	Cape May (Eliovson 1965)	x	x	x	x	x					x																			
<i>Crotalaria</i>		x	x	x	x	x					x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>capensis</i>	Cape Rattle-pod	x	x	x	x	x					x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Curtisia</i>											x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>dentata</i>	Assegai	x	x	x	x	x					x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Diospyros</i>																														
<i>austro-africana</i>	Fire-sticks (Palgrave 1977)	x	x	x	x	x		x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

† Climatic zone : where a species occurs naturally; * a species cultivated outside of its natural distribution; • in moist localities only; # species hardness to drought and frost will give an indication of its suitability to other zones

TABLE 7.—Recommended indigenous garden hedge and windbreak plants : climatic and geographic regions of occurrence (continued)

Species name		Barrier category	Climatic zone* (see Fig. 27)			Hardiness to drought and frost #			Geographic region (see Fig. 28)																				
Botanical	Common		Hot and moist	Hot and dry	Cold and moist	Cold and dry	Frost hardy	Moderately frost hardy	Drought hardy	Moderately drought hardy	1	2	3	4	5	6	7	8	9	10	11	Karoo	Highveld	Cultivated in Botanical Garden, Pretoria	Botswana	Zimbabwe	Mozambique	Swaziland	Lesotho
Common																													
<i>Diospyros</i>	Common Star-apple	x	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>dichrophylla</i>	Bluebush	x	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>lycoides</i>	Bladder-nut	x	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>whyteana</i>																													
<i>Dodonaea</i>																													
<i>angustifolia</i>	Sand Olive	x	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Dovyalis</i>																													
<i>cafra</i>	Kei-Apple	x	x	x	*	*		x		x	*	*	*	x	x	x	x	*	*	*	*	*	*	*	*	*	*	*	*
<i>zeyheri</i>	Wild Apricot	x	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Duvernoia</i>																													
<i>adhatodoides</i>	Pistol Bush	x	x	•							*	*	*	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Ehretia</i>																													
<i>rigida</i>	Puzzle Bush	x	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Ekebergia</i>																													
<i>capensis</i>	Cape Ash		x	•	*	*					*	*	*	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Erica</i>	Water Heath	x	x	•	x	x		x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>cafra</i>																													
<i>Erythrophysa</i>	Namaqua Red Balloon	x		x							x	x	x					x											
<i>alata</i>																													
<i>Eugenia</i>																													
<i>capensis</i>	Dune Myrtle	x	x								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>natalitia</i>	Natal Myrtle	x	x																										
<i>Euphorbia</i>																													
<i>tirucalli</i>	Rubber Euphorbia	x	x	x	x	x								x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Euryops</i>																													
<i>virginicus</i>		x	x	x	*	*		x		x	x	x	x																
<i>Ficus</i>																													
<i>natalensis</i>	Natal Fig		x	•										x	x	x													
<i>Ficus</i>																													
<i>sur</i>	Broom Cluster Fig	x	x	•							*	*	*	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

† Climatic zone : where a species occurs naturally; * a species cultivated outside of its natural distribution; • in moist localities only; # species hardiness to drought and frost will give an indication of its suitability to other zones

TABLE 7.— Recommended indigenous garden hedge and windbreak plants : climatic and geographic regions of occurrence (continued)

Species name		Barrier category	Climatic zone† (see Fig. 27)			Hardiness to drought and frost #			Geographic region (see Fig. 28)																				
Botanical	Common	Garden hedge Windbreak	Hot and moist	Hot and dry	Cold and moist	Cold and dry	Frost hardy	Moderately frost hardy	Drought hardy	Moderately drought hardy	1	2	3	4	5	6	7	8	9	10	11	Karoo	Highveld	Cultivated in Botanical Garden, Pretoria	Botswana	Zimbabwe	Mozambique	Swaziland	Lesotho
			Hot and moist	Hot and dry	Cold and moist	Cold and dry	Frost hardy	Moderately frost hardy	Drought hardy	Moderately drought hardy	Winter rainfall	Eastern Cape	Natal	Zululand	Eastern Transvaal	Northern Transvaal	South West Africa	Arid region											
<i>Flacourtia indica</i>	Governor's Plum	x	x	•									*		x	x	x	x	x	x	x	x	x	x	x	x			
<i>Freylinia tropica</i>	Transvaal Honey Bell Bush	x			x		x									x	x						x		x				
<i>Gardenia amoena</i>	Thorny Gardenia	x	x	•								x	x	x	x	x	x						x		x	x			
<i>Gardenia cornuta</i>	Natal Gardenia	x	x	x					x				x										x		x				
<i>Gardenia jovic-tonantis</i>	Yellow Gardenia	x	x	x												x	x	x					x	x	x				
<i>Gardenia resiniflua</i>	Gummy Gardenia	x	x	x					x														x	x	x				
<i>Gardenia thunbergii</i>	White Gardenia	x	x	x																			x	x	x				
<i>Gardenia volkensii</i>	Transvaal Gardenia	x	x	x					x														x	x	x				
<i>Grewia flavescens</i>	Rough-leaved Raisin	x	x	x					x														x	x	x				
<i>Grewia occidentalis</i>	Cross-berry	x	x	x				x															x	x	x				
<i>Grewia sutherlandii</i>	Natal Bottlebrush	x	x		x																		x						
<i>Halleria lucida</i>	Tree Fuchsia	x	x	x	x		x									*							x						
<i>Harpephyllum calfrum</i>	Wild Plum	x	x	x	x		x																x		x				
<i>Hibiscus ludwigii</i>		x	x																				x						
<i>Hibiscus pedunculatus</i>		x	x	x																			x						
<i>Hibiscus tiliaceus</i>	Wild Cotton Tree	x	x	x																									
<i>Hippobromus pauciflorus</i>	Bastard Horsewood	x	x	•	x		x																x						
<i>Homalium rufescens</i>	River Bastard Mulberry	x	x	x																									
<i>Hypericum revolutum</i>	Curry Bush	x	x	x	x		x				*																		

† Climatic zone : where a species occurs naturally; • a species cultivated outside of its natural distribution; • in moist localities only; # species hardiness to drought and frost will give an indication of its suitability to other zones

TABLE 7.—Recommended indigenous garden hedge and windbreak plants : climatic and geographic regions of occurrence (continued)

Species name		Barrier category	Climatic zone* (see Fig. 27)			Hardiness to drought and frost#			Geographic region (see Fig. 28)																			
Botanical	Common		Hot and moist	Hot and dry	Cold and moist	Cold and dry	Frost hardy	Moderately frost hardy	Drought hardy	Moderately drought hardy	1	2	3	4	5	6	7	8	9	10	11	Cultivated in Botanical Garden, Pretoria	Botswana	Zimbabwe	Mozambique	Swaziland	Transkei	Lesotho
		Windbreak	x																		x							
		Garden hedge	x	•	x		x		x		x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
	<i>Jubaeopsis cafra</i>	Pondo Coconut	Screen																									
	<i>Kiggelaria africana</i>	Wild Peach	x																									
	<i>Lannea discolor</i>	Live-long	x	x	x																							
	<i>Leucadendron confertum</i>	Dune Yellowbush	x	x	x																							
	<i>platyspermum</i>		x	x	x																							
	<i>salicifolium</i>	River Conebush	x	•	x																							
	<i>salignum</i>		x	x	x																							
	<i>uliginosum</i>		x	x	x																							
	<i>Loxostylis alata</i>	Tenderwood	x	x																								
	<i>Lycium afrum</i>	Kraal Honey-thorn		x	x																							
	<i>ferocissimum</i>	African Boxthorn	x	x	x																							
	<i>Maerua cafra</i>	Bush-cherry	x	x	x																							
	<i>Maytenus heterophylla</i>	Common Spike-thorn																										
	<i>polyacantha</i>	Kraal Spike-thorn	x	x	x																							
	<i>senegalensis</i>	Red Spike-thorn	x	x	x																							
	<i>Melanthus comosus</i>	Kruidjie-roer-my-nie	x	x	x																							
	<i>Minusops cafra</i>	Coast Red Milkwood	x	x																								
	<i>Mundulea sericea</i>	Cork Bush	x	x	x																							

† Climatic zone : where a species occurs naturally; * a species cultivated outside of its natural distribution; • in moist localities only; # species hardiness to drought and frost will give an indication of its suitability to other zones

TABLE 7.— Recommended indigenous garden hedge and windbreak plants : climatic and geographic regions of occurrence (continued)

Species name		Barrier category	Climatic zone† (see Fig. 27)			Hardiness to drought and frost#			Geographic region (see Fig. 28)																				
			Hot and moist	Hot and dry	Cold and moist	Cold and dry	Frost hardy	Moderately frost hardy	Drought hardy	Moderately drought hardy	1	2	3	4	5	6	7	8	9	10	11	Karoo	Highveld	Cultivated in Botanical Garden, Pretoria	Botswana	Zimbabwe	Mozambique	Swaziland	Lesotho
Botanical		Common																											
<i>Myrsine africana</i>		Cape Myrtle	x	x	x		x				x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
<i>Nymania capensis</i>		Chinese Lanterns		x		x		x			x	x						x	x				x	x	x	x	x	x	x
<i>Ochna natalitia</i>		Natal Plane	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x				x	x	x	x	x	x	x
<i>Serrulata</i>		Small-leaved Plane	x	x	x						x	x	x	x	x	x	x	x	x										
<i>Olea capensis</i> subsp. <i>macrocarpa</i>		Ironwood	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x				x	x	x	x	x	x	x
<i>capensis</i> subsp. <i>africana</i>		Wild Olive	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x				x	x	x	x	x	x	x
<i>Oncoba spinosa</i>		Snuff-box Tree	x	•							*			x	x	x							x	x	x	x			
<i>Pavetta lanceolata</i>		Forest Bride's Bush	x	•	x							x	x	x	x	x	x	x	x				x		x	x	x	x	x
<i>Peddiea africana</i>		Poison Olive	x									x	x	x	x	x	x	x	x				x	x	x	x	x	x	x
<i>Phoenix reclinata</i>		Wild Date Palm	x	•								x	x	x	x	x	x	x	x				x	x	x	x	x	x	x
<i>Pittosporum viridiflorum</i>		Cheesewood	x	x	x	x					x	x	x	x	x	x	x	x	x				x	x	x	x	x	x	x
<i>Plumbago auriculata</i>		Plumbago	x	x	x	x					*	x	x	x	x	x	x	x	x				x	x	x	x	x	x	x
<i>Podocarpus elongatus</i>		Breede River Yellowwood	x	x	x						x																		
<i>falcatus</i>		Outeniqua Yellowwood	x	x	x			x		x	*	x	x	x	x	x	x	x	x				x	x	x	x	x	x	x
<i>henkelii</i>		Henkel's Yellowwood	x	x	x			x		x	*	*	*	x	x	*	*	*	*				x	x	x	x	x	x	x
<i>latifolius</i>		Real Yellowwood	x	x	x	x		x		x	x	x	x	x	x	x	x	x	x				x	x	x	x	x	x	x

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TABLE 7.—Recommended indigenous garden hedge and windbreak plants : climatic and geographic regions of occurrence (continued)

Species name		Barrier category	Climatic zone† (see Fig. 27)			Hardiness to drought and frost ‡			Geographic region (see Fig. 28)																				
Botanical	Common		Hot and moist	Hot and dry	Cold and moist	Cold and dry	Frost hardy	Moderately frost hardy	Moderately drought hardy	1	2	3	4	5	6	7	8	9	10	11	Karoo	Highveld	Cultivated in Botanical Garden, Pretoria	Botswana	Zimbabwe	Mozambique	Swaziland	Transkei	Lesotho
<i>Polygala myrtifolia</i>	September Bush (Palgrave 1977)	x	x	x	x	x	x	x		x	x	x	x	x	x		x	x		x		x						x	
<i>Portulacaria afra</i>	Spekboom, Porkbush	x	x	x	x			x		x	x	x	x	x	x					x		x		x	x				
<i>Pterolobium stellatum</i>	Madagascar Thorn	x	x	•													x			x		x							
<i>Rapanea melanophloeos</i>	Cape Beech	x	x	x	x			x		x	x	x	x	x	x		x			x		x		x					
<i>Raphia australis</i>	Kosi Palm	x	x										*	x															
<i>Rauvolfia caffra</i>	Quinine Tree	x	x	•	x				x				x	x	x		x			x		x		x					
<i>Rhamnus prinoides</i>	Dogwood	x	x	•	x		x						x	x	x					x		x		x					
<i>Rhigozum brevispinosum</i>	Short-thorn Pomegranate	Screen	x	x	x	x		x				x	x	x	x		x			x		x		x					
<i>Rhigozum obovatum</i>	Yellow Pomegranate	x	x	x	x	x		x				x			x		x			x		x							
<i>Rhus erosa</i>	Broom Karree	x	x	x	x	•	x		x			x								x		x		x				x	
<i>Rhus incisa</i>	Rub-rub Berry	x	x	x	x		x					x								x		x							
<i>Rhus lancea</i>	Karree	x	x	x	x	x	x					x								x		x		x					
<i>leptodictya</i>	Mountain Karree	x	x	x	x	x	x					x								x		x		x					
<i>longispina</i>	Thorny Currant	x	x	x	x							x								x		x		x					
<i>montana</i>	Drakensberg Karree	x	x	x	x							x								x		x		x				x	
<i>pyroides</i>	Common Wild Currant	x	x	x	x	x	x					x								x		x		x				x	
<i>undulata</i>	Kuni-bush	x	x	x	x	x	x					x								x		x		x				x	
<i>Rinorea angustifolia</i>	White Violet-bush	x	x		x							x								x		x						x	

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TABLE 7.—Recommended indigenous garden hedge and windbreak plants : climatic and geographic regions of occurrence (continued)

Species name		Barrier category	Climatic zone† (see Fig. 27)			Hardiness to drought and frost #		Geographic region (see Fig. 28)															
Botanical	Common	Windbreak	Hot and moist	Hot and dry	Cold and moist	Cold and dry	Frost hardy	Moderately frost hardy	Drought hardy	Moderately drought hardy	Geographic region (see Fig. 28)												
			1	2	3	4	5	6	7	8	9	10	11	Karoo	Highveld	Cultivated in Botanical Garden, Pretoria	Botswana	Zimbabwe	Mozambique	Swaziland	Transkei	Lesotho	
<i>Trichilia emetica</i>	Natal Mahogany	x	x	•				x						x	x	x	x	x	x	x	x	x	x
<i>Turraea obtusifolia</i>	Small Honeycuckle Tree (Palgrave, 1977)	x	x	x	x			x						x	x	x	x	x	x	x	x	x	x
<i>Vepris undulata</i>	White Ironwood		x	x										x	x	x	x	x	x	x	x	x	x
<i>Virgilia oroboides</i>	Blossom Tree	x	x	x	*			x						x	x	x	x	x	x	x	x	x	x
<i>Widdringtonia cedarbergensis</i>	Clanwilliam Cedar	x	x	x	x			x						x	x	x	x	x	x	x	x	x	x
<i>nodiflora</i>	Mountain Cypress	x	x	x	*			x						x	x	x	x	x	x	x	x	x	x
<i>schwarzii</i>	Willowmore Cedar	x	x					x						x	x	x	x	x	x	x	x	x	x
<i>Ziziphus mucronata</i> subsp. <i>mucronata</i>	Buffalo-thorn	x	x	x	x	x	x	x						x	x	x	x	x	x	x	x	x	x

† Climatic zone : where a species occurs naturally; * a species cultivated outside of its natural distribution; • in moist localities only; # species hardiness to drought and frost will give an indication of its suitability to other zones

TABLE 8.—Recommended indigenous garden hedge and windbreak plants : species descriptions and miscellaneous information

Species name	Description							Miscellaneous																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
	Woody-ness	Life form	Height		Foliage	Flowers and fruits	Armature (thorns)	Propaga-tion	Substrate, soil and moisture #																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
			Average (m)	Maximum (m)					Dark green	Light green	Grey/blue-green	Evergreen	Deciduous	Colour of (Fl)owers — scented (S) and (Fr)uits — edible (E)	Always armed	Sometimes armed	From seed	From cuttings	From trunks	Stony	Beach dune	Desert dune	Other deep sand	Clay	Brack	Calcrete	Latent	Poorly-drained	Eroded																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
Other †	Woody	Succulent	Tree	Shrub	Scandent shrub	Climber																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	

† 1, ability to coppice; 2, responds to trimming; 3, poisonous; 4, irritant; 5, resists sea winds; 6, shade tolerant; 7, partially shade tolerant; 8, browse-resistant. # Only tolerance of 'adverse' and not optimal conditions are included. A species tolerance of any of these 'adverse' conditions may only be marginal but it has been noted. Bold type used under the heading Life form = most frequently encountered form; Height, Foliage = the usual condition; other columns = well-developed characteristics.

TABLE 8. — Recommended indigenous garden hedge and windbreak plants : species descriptions and miscellaneous information (continued)

Species name	Description						Miscellaneous													
	Woody- ness	Life form	Height	Foliage			Flowers and fruits	Armature (thorns)	Propaga- tion	Substrate, soil and moisture #										
				Dark green	Light green	Grey/blue-green				Colour of (Fl)owers — scented (S) (Fr)uits — edible (E)	Always armed	Sometimes armed	Stony	Beach dune	Desert dune	Other deep sand	Clay	Brack	Calcrete	Laterite
Species name	Woody	Succulent	Tree Shrub Scandent shrub Climber	Average (m)	Maximum (m)	Dark green Light green Grey/blue-green Evergreen Deciduous	Fls orange	Always armed	From seed From cuttings From truncheons	Stony	Beach dune	Desert dune	Other deep sand	Clay	Brack	Calcrete	Laterite	Poorly-drained	Eroded	Other †
	x	x	x	2-4	18	x	Fls orange		x	x	x	x	x	x	x	x	x	x	x	2, 5, 6
	x	x	x	3-7	15	x			x	x	x	x	x	x	x	x	x	x	x	5, 6
	x	x	x	3-6	20	x	Fls S; Frs E		x	x	x	x	x	x	x	x	x	x	x	
	x	x	x	1-2	5	x	Fls S; Frs E	x	x	x	x	x	x	x	x	x	x	x	x	2, 5, 7
	x	x	x	1-2	4	x	Fls white, S; Frs E	x	?	?	x	x	x	x	x	x	x	x	x	1, 2, 5, 7
	x	x	x	2-4	7,5	x	Fls white, S; Frs red, E	x	?	?	x	x	x	x	x	x	x	x	x	5, 7
	x	x	x	1-2	3	x	Fls S; Frs E	x	?	?	x	x	x	x	x	x	x	x	x	
	x	x	x	2-3	3	x				x										
	x	x	x	2-4	10	x	Fls S; Frs orange	x		x	x	x	x	x	x	x	x	x	x	6
	x	x	x	3-5	10	x				x	x	x	x	x	x	x	x	x	x	6
	x	x	x	1-2	6	x	Fls yellow; Frs E			x	x	x	x	x	x	x	x	x	x	1, 5, 6
	x	x	x	1-2	4	x	Fls S			x	x	x	x	x	x	x	x	x	x	3?, 5, 6
	x	x	x	0,5-1,5	2,5	x	Fls white/pink; S			x	x	x	x	x	x	x	x	x	x	5
	x	x	x	1-2	6	x	Fls yellow			x	x	x	x	x	x	x	x	x	x	1, 3?, 6
	x	x	x	6-12	20	x				x										6
	x	x	x	0,5-2	10	x	?			x										
	x	x	x	1-3	14	x	?			x										
	x	x	x	1-3	7,5	x	?	Frs gold		x	x	x	x	x	x	x	x	x	x	3, 6
	x	x	x	1-6	17	x	?	Frs red		x	x	x	x	x	x	x	x	x	x	3?, 6
	x	x	x							x	x	x	x	x	x	x	x	x	x	1, 2, 6

† 1, ability to coppice; 2, responds to trimming; 3, poisonous; 4, irritant; 5, resists sea winds; 6, shade tolerant; 7, partially shade tolerant; 8, browse-resistant. # Only tolerance of 'adverse' and not optimal conditions are included. A species tolerance of any of these 'adverse' conditions may only be marginal but it has been noted. Bold type used under the heading Life form = most frequently encountered form; Height, Foliage = the usual condition; other columns = well-developed characteristics.

TABLE 8.—Recommended indigenous garden hedge and windbreak plants : species descriptions and miscellaneous information (continued)

Species name	Description						Miscellaneous																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
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				Average (m)	Maximum (m)	Dark green				Light green	Grey/blue-green	Evergreen	Deciduous	Colour of (Fl)owers — scented (S) and (Fr)uits — edible (E)	Always armed	Sometimes armed	From seed	From cuttings	From trunks	Stony	Beach dune	Desert dune	Other deep sand	Clay	Brack	Calcrete	Laterite	Poorly-drained	Eroded	Other †																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
<i>Dodonaea angustifolia</i>	x	Tree	1-3	10	x	x	x																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								

† 1, ability to coppice; 2, responds to trimming; 3, poisonous; 4, irritant; 5, resists sea winds; 6, shade tolerant; 7, partially shade tolerant; 8, browse-resistant. # Only tolerance of 'adverse' and not optimal conditions are included. A species tolerance of any of these 'adverse' conditions may only be marginal but it has been noted. Bold type used under the heading Life form = most frequently encountered form; Height, Foliage = the usual condition; other columns = well-developed characteristics.

TABLE 8.— Recommended indigenous garden hedge and windbreak plants : species descriptions and miscellaneous information (continued)

Species name	Description						Miscellaneous								
	Woody-ness	Life form	Height		Foliage	Flowers and fruits	Armature (thorns)	Propaga-tion	Substrate, soil and moisture #						
			Average (m)	Maximum (m)	Dark green Light green Grey/blue-green Evergreen Deciduous	Colour of (Fl)owers — scented (S) (Fr)uits — edible (E)	Always armed Sometimes armed	From seed From cuttings From truncheons	Stony Beach dune Desert dune Other deep sand Clay Brack Calcrete Latente Poorly-drained Eroded	Other +					
Woody	Succulent	Tree Shrub Scandent shrub Climber	2-5	5	x			x	x					1	
			2-4	7	x										
			2-3	7	x										
			3-5	10	x										
			3-5	8	x										
			1-3	5	x										
			2-4	12	x										
			2-4	9	x										
			2-5	12	x										
			8-12	26	x										
x	x	x	1-2	3	x									6	
			0.5-2	2.5	x										2, 4, 6
			3-6	12	x										5
			2-4	10	x										3?
			3-5	7	x										5
			1-3	7	x										1, 2, 7, 8
			3-5?	8	x										5
			3-9	25	x										1
			3-6	15	x										
			x	x	x										

† 1, ability to coppice; 2, responds to trimming; 3, poisonous; 4, irritant; 5, resists sea winds; 6, shade tolerant; 7, partially shade tolerant; 8, browse-resistant. # Only tolerance of 'adverse' and not optimal conditions are included. A species tolerance of any of these 'adverse' conditions may only be marginal but it has been noted. Bold type used under the heading Life form = most frequently encountered form; Height, Foliage = the usual condition; other columns = well-developed characteristics.

TABLE 8.—Recommended indigenous garden hedge and windbreak plants : species descriptions and miscellaneous information (continued)

Species name	Description						Miscellaneous																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	Woody-ness	Life form	Height		Foliage	Flowers and fruits	Armature (thorns)	Propaga-tion	Substrate, soil and moisture #																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
			Average (m)	Maximum (m)					Dark green	Light green	Grey/blue-green	Evergreen	Deciduous	Colour of (Fl)owers — scented (S) and (Fr)uits — edible (E)	Always armed	Sometimes armed	Stony	Beach dune	Desert dune	Other deep sand	Clay	Brack	Calcrete	Laterite	Poorly-drained	Eroded																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
Woody	Succulent	Tree	Shrub	Scandent shrub	Climber																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					

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TABLE 8.—Recommended indigenous garden hedge and windbreak plants : species descriptions and miscellaneous information (continued)

Species name	Description					Miscellaneous												
	Woodi- ness	Life form	Height	Foliage	Flowers and fruits	Armature (thorns)	Propaga- tion	Substrate, soil and moisture #										
								From seed	From cuttings	From trunks	Stony	Beach dune	Desert dune	Other deep sand	Clay	Brack	Calcrete	Laterite
Woody	Succulent	Tree Shrub Scandent shrub Climber	Average (m) Maximum (m)	Dark green Light green Grey/blue-green Evergreen Deciduous	Colour of (Fl)owers — scented (S) and (Fr)uits — edible (E)	Always armed Sometimes armed	x x											

† 1, ability to coppice; 2, responds to trimming; 3, poisonous; 4, irritant; 5, resists sea winds; 6, shade tolerant; 7, partially shade tolerant; 8, browse-resistant. # Only tolerance of 'adverse' and not optimal conditions are included. A species tolerance of any of these 'adverse' conditions may only be marginal but it has been noted. Bold type used under the heading Life form = most frequently encountered form; Height, Foliage = the usual condition; other columns = well-developed characteristics.

TABLE 8. — Recommended indigenous garden hedge and windbreak plants : species descriptions and miscellaneous information (continued)

Species name	Description						Miscellaneous						
	Woodi-ness	Life form	Height	Foliage	Flowers and fruits	Armature (thorns)	Propaga-tion	Substrate, soil and moisture #					
	Woody	Tree Shrub Scandent shrub Climber	Average (m) Maximum (m)	Dark green Light green Grey/blue-green Evergreen Deciduous	Colour of (Fl)owers — scented (S) and (Fr)uits — edible (E)	Always armed Sometimes armed	From seed From cuttings From truncheons	Stony Beach dune Desert dune Other deep sand Clay Brack Calcrete Laterite Poorly-drained Flooded	Other †				
<i>Rauvolfia</i>													
<i>cafra</i>	x		6–12	x	x	Fls S	x	x				x	5, 6
<i>Rhamnus</i>													
<i>prinioides</i>	x	x	2–4	x	x	Frs red/black, E	x	x				x	2, 6
<i>Rhigozum</i>													
<i>brevispinosum</i>	x	x	1–2	x	x	Fls yellow							
<i>obovatum</i>	x	x	1–3	x	x	Fls yellow	x	x					2
<i>Rhus</i>													
<i>erosa</i>	x	x	1–2	x	x		x	x					
<i>incisa</i>	x	x	1–2	x	?		x	x					5
<i>lancea</i>	x	x	3–7	x	x	Fls S; Frs E	x	x				x	1, 2
<i>leptodictya</i>	x	x	3–5	x	x		x	x				x	2
<i>longispina</i>	x	x	2–4	x	x	Fls S	x	x					5, 7
<i>montana</i>	x	x	1–3	x	?		x	x					
<i>pyroides</i>	x	x	3–5	x	x	Fls S; Frs E	x	x				x	4, 7
<i>undulata</i>	x	x	1–3	x	?		x	x				x	
<i>Rinorea</i>													
<i>angustifolia</i>	x	x	3–6	x	x	Fls white, S	x	x					7
<i>Schottia</i>													
<i>afra</i>	x	x	2–4	x	?	Fls red; Frs brown	x	x					
<i>brachypetala</i>	x	x	5–10	x	x	Fls red; Frs brown	x	x				x	2
<i>latifolia</i>	x	x	3–7	x	x	Fls pink; Frs brown	x	x				x	
<i>Scolopia</i>													
<i>mundii</i>	x	x	3–6	x	x	Frs orange/yellow	x	x				x	1, 3, 5?, 6
<i>zeyheri</i>	x	x	3–5	x	?	Frs E	x	x				x	1, 5?, 7
<i>Securinega</i>													
<i>virosa</i>	x	x	1–3	x	x	Fls S; Frs E	x	x				x	
<i>Sesbania</i>													
<i>sesban</i>	x	x	2–3	x	?	Fls yellow						x	
<i>Sideroxylon</i>													
<i>inermis</i>	x	x	4–6	x	x	Frs E	x	x				x	5

† 1. ability to coppice; 2. responds to trimming; 3. poisonous; 4. irritant; 5. resists sea winds; 6. shade tolerant; 7. partially shade tolerant; 8. browse-resistant. # Only tolerance of 'adverse' and not optimal conditions are included. A species tolerance of any of these 'adverse' conditions may only be marginal but it has been noted. Bold type used under the heading Life form = most frequently encountered form; Height, Foliage = the usual condition; other columns = well-developed characteristics.

TABLE 8.—Recommended indigenous garden hedge and windbreak plants : species descriptions and miscellaneous information (continued)

Species name	Description						Miscellaneous										
	Woodiness	Life form	Height		Foliage	Flowers and fruits	Armature (thorns)	Propagation	Substrate, soil and moisture #								
			Average (m)	Maximum (m)					Stony	Beach dune	Desert dune	Other deep sand	Clay	Brack	Calcrete	Laterite	Poorly-drained
Other †																	
<i>Strelitzia alba</i>	x																
<i>caudata</i>	x		5-8	10	x	Fls white & blue											
<i>nicotai</i>	x		3-5	10	x	Fls white & blue/mauve											
<i>Syndenium cupulare</i>	x	x	1-2	5	x	Fls greenish-yellow											
<i>Syzygium cordatum</i>	x	x	4-8	21	x	Fls white, S; Frs purple, E											
<i>Tamarix usneoides</i>	x	x	3-6	10	x												
<i>Tarchonanthus camphoratus</i>	x	x	2-5	12	x	Fls white; Frs white											
<i>Tecomaria capensis</i>	x	x	1-3	7	x	Fls orange/scarlet/yellow											
<i>Terminalia prunioides</i>	x	x	3-5	15	x	Fls cream; Frs red/purple											
<i>Trichilia emetica</i>	x		7-13	30	x	Fls S; seed — orange & black											
<i>Turraea obtusifolia</i>	x	x	0.5-1.5	5	x	Fls white, S; seed — crimson											
<i>Vepria undulata</i>	x	x	3-10	20	x												
<i>Virgilia oroboides</i>	x		3-5	15	x	Fls pink											
<i>Widdringtonia cedarbergensis</i>	x		5-7	18	x												
<i>nodiflora</i>	x	x	4	15	x												
<i>schwarzii</i>	x		10-15	40	x												
<i>Ziziphus mucronata</i> subsp. <i>mucronata</i>	x	x	3-6	21	x	Frs E		x									

† 1, ability to coppice; 2, responds to trimming; 3, poisonous; 4, irritant; 5, resists sea winds; 6, shade tolerant; 7, partially shade tolerant; 8, browse-resistant. # Only tolerance of 'adverse' and not optimal conditions are included. A species tolerance of any of these 'adverse' conditions may only be marginal but it has been noted. Bold type used under the heading Life form = most frequently encountered form; Height, Foliage = the usual condition; other columns = well-developed characteristics.

TABLE 9.—Indigenous species which have been described as good hedges and/or windbreak plants

Hedges
<i>Aloe arborescens</i> (ornamental, informal hedge) <i>Bauhinia galpinii</i> (ornamental, informal hedge) <i>Bauhinia tomentosa</i> (ornamental, informal hedge) <i>Brabejum stellatifolium</i> (excellent broad hedge) <i>Buddleja salviifolia</i> (informal hedge) <i>Burchellia bubalina</i> (formal low hedge) <i>Buxus macowanii</i> (formal low hedge) <i>Carissa bispinosa</i> (formal low hedge) <i>Carissa macrocarpa</i> (excellent ornamental hedge) <i>Diospyros whyteana</i> (excellent hedge) <i>Dodonaea angustifolia</i> <i>Dovyalis caffra</i> (excellent hedge) <i>Duvernoia adhatodoides</i> (excellent hedge) <i>Ehretia rigida</i> (informal hedge) <i>Erica caffra</i> <i>Grewia occidentalis</i> (informal hedge) <i>Halleria lucida</i> <i>Harpephyllum caffrum</i> <i>Hibiscus tiliaceus</i> (ornamental hedge) <i>Myrsine africana</i> <i>Ochna serrulata</i> (ornamental hedge) <i>Olea europaea</i> subsp. <i>africana</i> <i>Oncoba spinosa</i> (ornamental hedge) <i>Pavetta lanceolata</i> (excellent hedge) <i>Peddiea africana</i> <i>Pittosporum viridiflorum</i> <i>Plumbago auriculata</i> (ornamental, informal hedge) <i>Podocarpus henkelii</i> <i>Portulacaria afra</i> (excellent hedge) <i>Rhamnus prinoides</i> <i>Rhus lancea</i> <i>Rhus longispina</i> (large informal hedge) <i>Rhus montana</i> <i>Tecomaria capensis</i> (excellent informal hedge) <i>Trichilia emetica</i> <i>Turraea obtusifolia</i> (informal hedge)
Windbreaks
<i>Carissa macrocarpa</i> <i>Diospyros lycioides</i> <i>Dovyalis caffra</i> <i>Erica caffra</i> (excellent windbreak) <i>Harpephyllum caffrum</i> <i>Kiggelaria africana</i> <i>Lycium afrum</i> <i>Lycium ferocissimum</i> <i>Mimusops caffra</i> <i>Olea europaea</i> subsp. <i>africana</i> <i>Podocarpus henkelii</i> (excellent windbreak) <i>Podocarpus latifolius</i> <i>Rhus lancea</i> <i>Rhus leptodictya</i> <i>Sideroxylon inerme</i> <i>Trichilia emetica</i> <i>Virgilina oroboides</i>

TABLE 10.—Recommended indigenous garden hedge and windbreak plants for the four major climatic regions of southern Africa

Hot and moist regions	Hot and dry regions
Garden hedges <i>Aloe arborescens</i> <i>Bauhinia galpinii</i> <i>Brachylaena discolor</i> <i>Burchellia bubalina</i> <i>Buxus macowanii</i> <i>Carissa macrocarpa</i> <i>Dovyalis caffra</i> <i>Duvernoia adhatodoides</i> <i>Harpephyllum caffrum</i> <i>Hibiscus tiliaceus</i> <i>Ochna serrulata</i> <i>Olea europaea</i> subsp. <i>africana</i> <i>Oncoba spinosa</i> <i>Pavetta lanceolata</i> <i>Peddiea africana</i> <i>Rhus montana</i> <i>Trichilia emetica</i>	Garden hedges <i>Bauhinia galpinii</i> <i>Bauhinia tomentosa</i> <i>Dodonaea angustifolia</i> <i>Dovyalis caffra</i> <i>Ehretia rigida</i> <i>Olea europaea</i> subsp. <i>africana</i> <i>Plumbago auriculata</i> <i>Portulacaria afra</i> <i>Rhus lancea</i> <i>Rhus leptodictya</i> <i>Rhus longispina</i> <i>Tecomaria capensis</i> <i>Turraea obtusifolia</i>
Windbreaks <i>Brabejum stellatifolium</i> <i>Brachylaena discolor</i> <i>Carissa macrocarpa</i> <i>Chrysanthemoides monilifera</i> <i>Dovyalis caffra</i> <i>Harpephyllum caffrum</i> <i>Kiggelaria africana</i> <i>Mimusops caffra</i> <i>Olea capensis</i> subsp. <i>macrocarpa</i> <i>Olea europaea</i> subsp. <i>africana</i> <i>Podocarpus henkelii</i> <i>Podocarpus latifolius</i> <i>Sideroxylon inerme</i> <i>Trichilia emetica</i> <i>Virgilina oroboides</i>	Windbreaks <i>Acacia karroo</i> <i>Diospyros lycioides</i> <i>Dovyalis caffra</i> <i>Gardenia volkensii</i> <i>Olea europaea</i> subsp. <i>africana</i> <i>Rhus incisa</i> <i>Rhus lancea</i> <i>Rhus leptodictya</i> <i>Rhus longispina</i> <i>Schotia afra</i> <i>Schotia brachypetala</i> <i>Schotia latifolia</i> <i>Tamarix usneoides</i>
Cold and moist regions	Cold and dry regions
Garden hedges <i>Buddleja auriculata</i> <i>Buddleja salviifolia</i> <i>Diospyros whyteana</i> <i>Dovyalis caffra</i> <i>Ehretia rigida</i> <i>Erica caffra</i> <i>Halleria lucida</i> <i>Myrsine africana</i> <i>Olea europaea</i> subsp. <i>africana</i> <i>Pittosporum viridiflorum</i> <i>Plumbago auriculata</i> <i>Rhamnus prinoides</i> <i>Rhus lancea</i> <i>Rhus leptodictya</i>	Garden hedges <i>Diospyros lycioides</i> <i>Dodonaea angustifolia</i> <i>Dovyalis caffra</i> <i>Ehretia rigida</i> <i>Halleria lucida</i> <i>Olea europaea</i> subsp. <i>africana</i> <i>Pittosporum viridiflorum</i> <i>Plumbago auriculata</i> <i>Polygala myrtifolia</i> <i>Rhus lancea</i> <i>Rhus leptodictya</i> <i>Rhus pyroides</i>
Windbreaks <i>Buddleja salviifolia</i> <i>Dovyalis caffra</i> <i>Erica caffra</i> <i>Kiggelaria africana</i> <i>Olea europaea</i> subsp. <i>africana</i> <i>Podocarpus henkelii</i> <i>Podocarpus latifolius</i> <i>Rhus lancea</i> <i>Rhus leptodictya</i> <i>Virgilina oroboides</i>	Windbreaks <i>Acacia karroo</i> <i>Diospyros lycioides</i> <i>Dovyalis caffra</i> <i>Lycium afrum</i> <i>Lycium ferocissimum</i> <i>Olea europaea</i> subsp. <i>africana</i> <i>Rhus lancea</i> <i>Rhus leptodictya</i> <i>Schotia latifolia</i> <i>Tamarix usneoides</i> <i>Tarchonanthus camphoratus</i> <i>Ziziphus mucronata</i> subsp. <i>mucronata</i>

TABLE 11.—Indigenous spp. suggested for road-island plantings

	Spreading growth form, not suitable for narrow road-islands	Thorny spp., used as deterrents to pedestrians (see Tables 3–6)
<i>Acacia ataxacantha</i>	X	X
<i>Aloe arborescens</i>		
<i>Bauhinia galpinii</i>		
<i>Bauhinia tomentosa</i>		
<i>Brabejum stellatifolium</i>	X	
<i>Buddleja salviifolia</i>		
<i>Capparis sepiaria</i>		X
<i>Capparis tomentosa</i>	X	X
<i>Carissa macrocarpa</i>		X
<i>Diospyros</i> sp.		
<i>Dodonaea angustifolia</i>		
<i>Dovyalis caffra</i>		X
<i>Duvernoia adhatodoides</i>		
* <i>Ehretia rigida</i>	X	
<i>Ehrythrophysa alata</i>		
† <i>Euphorbia tirucalli</i>		
<i>Gardenia cornuta</i>		
<i>Gardenia volkensii</i>	X	
<i>Grewia flavescens</i>		
<i>Hypericum revolutum</i>		
<i>Oncoba spinosa</i>	X	X
<i>Portulacaria afra</i>		
<i>Pterolobium stellatum</i>	X	X
<i>Rhus longispina</i>	X	X
<i>Strelitzia</i> spp.		
<i>Tarchonanthus camphoratus</i>		
<i>Tecomaria capensis</i>		
<i>Terminalia prunioides</i>	X	
<i>Widdringtonia nodiflora</i>		

* recommended for freeway plantings, especially as a replacement for *Pyracantha* and *Cotoneaster* spp.

† danger: toxic latex.

TABLE 12.—Alien security hedge, garden hedge and windbreak plants that have been used or recommended for use in southern Africa. Scientific names are according to the Liberty Hyde Bailey Hortorium, 1977, and Von Breitenbach (1984)

Scientific name	Common name	Barrier category				Climatic region				Weed status			
		Security hedge	Garden hedge	Wind break		Hot and moist	Hot and dry	Cold and moist	Cold and dry	Declared weed	Declared invader	Aggressive	Other
<i>Abelia</i>													
<i>chinensis</i>			x			x	x	x					
<i>floribunda</i>	Mexican Abelia		x			x		x					
<i>x grandiflora</i>	Glossy Abelia		x			x		x	x				
<i>Abutilon</i> spp.	Flowering Maples		x			x		x					
<i>Acacia</i>													
<i>armata</i>	Kangaroo Thorn	x				x	x						x
<i>baileyana</i>	Bailey's Wattle			x		x	x	x	x			x	
<i>cultriformis</i>	Knife-leaved Wattle		x	x		x	x	x	x				
<i>cyclops</i>	Red Eye, Cape Coast Wattle		x	x		x	x				x		
<i>dealbata</i>	Silver Wattle			x		x		x			x		
<i>decurrens</i>	Green Wattle			x		x	x	x				x	
<i>longifolia</i>	Sallow Wattle, Long-leaved Wattle		x	x		x		x			x		
<i>mearnsii</i>	Black Wattle			x		x		x			x		
<i>melanoxylon</i>	Blackwood			x		x		x			x		
<i>podalyriifolia</i>	Pearl Acacia			x		x		x				x	
<i>pycnantha</i>	Golden Wattle			x		x						x	
<i>saligna</i>	Port Jackson Willow		x	x		x	x				x		
<i>terminatis</i>	Peppertree Wattle, Cedar/Eyata Wattle			x				x				x	
<i>Agathis</i>													
<i>robusta</i>	Queensland Kauri			x		x							
<i>Agave</i>													
<i>americana</i>	Century Plant	x				x	x	x					x
<i>sisalana</i>	Sisal Hemp	x				x	x						x
<i>Agonis</i>													
<i>flexuosa</i>	Willow Myrtle			x		x							
<i>Ailanthus</i>													
<i>altissima</i>	Tree-of-Heaven			x		x		x				x	
<i>Alternanthera</i>													
<i>ficoidea</i> cv. <i>versicolor</i>	Copper Alternanthera		x			x							
<i>Anacardium</i>													
<i>occidentale</i>	Cashew			x		x	x						x
<i>Araucaria</i>													
<i>angustifolia</i>	Parana Pine			x		x		x					
<i>bidwilli</i>	Bunya-Bunya Pine			x		x		x					
<i>columnaris</i>	New Caledonian Pine			x		x							
<i>cunninghamii</i>	Hoop Pine			x		x							
<i>heterophylla</i>	Norfolk Island Pine			x		x							
<i>Atriplex</i>													
<i>nummularia</i>	Old Man's Salt Bush		x			x	x	x	x				
<i>Aucuba</i>													
<i>japonica</i>	Japanese Laurel		x					x					
<i>Berberis</i>													
<i>darwinii</i>	Darwin's Barberry	x						x					
<i>julianae</i>	Wintergreen Barberry		x			x	x	x					
<i>x stenophylla</i>		x						x					
<i>thunbergii</i>	Japanese Barberry		x			x	x	x					
<i>vulgaris</i>	Common Barberry	x				x		x					
<i>Bougainvillea</i>													
<i>glabra</i>	Paper Flower	x	x			x	x	x					
<i>spectabilis</i>		x	x			x	x						
<i>Brachychiton</i>													
<i>acerifolium</i>	Australian Flame Tree			x		x							
<i>discolor</i>	Pink Flame Tree			x		x							
<i>populneum</i>	Kurrajong			x		x	x	x	x				
<i>Brunfelsia</i>													
<i>pauciflora</i>	Yesterday-Today-and-Tomorrow		x			x		x					
<i>uniflora</i>	Manacá		x			x							
<i>Buxus</i>													
<i>sempervirens</i>	Common Box		x					x					
<i>Caesalpinia</i>													
<i>decapetala</i>	Mauritius Thorn	x				x				x			
<i>pulcherrima</i>	Barbados-Pride		x			x							x
<i>Callitris</i>													
<i>columnaris</i>	White Cypress Pine		x	x		x	x	x	x				x
<i>endlicheri</i>	Black Cypress Pine		x	x		x	x	x	x				x

TABLE 12.—Alien security hedge, garden hedge and windbreak plants that have been used or recommended for use in southern Africa. Scientific names are according to the Liberty Hyde Bailey Hortorium, 1977, and Von Breitenbach (1984) (continued)

Scientific name	Common name	Barrier category				Climatic region				Weed status			
		Security hedge	Garden hedge	Windbreak		Hot and moist	Hot and dry	Cold and moist	Cold and dry	Declared weed	Declared invader	Aggressive	Other
<i>Callitris preissii</i>	Common Cypress Pine		x			x	x	x					x
<i>Camellia sinensis</i>	Tea Plant		x			x							
<i>Carpinus betulus</i>	Common Hornbeam			x				x					
<i>Cassia corymbosa</i>			x			x		x				x	
<i>siamea</i>	Kassod Tree					x	x						
<i>Castanospermum australe</i>	Australian Chestnut			x		x							
<i>Casuarina cunninghamiana</i>	Beefwood		x	x		x	x	x					
<i>equisetifolia</i>	Horsetail Tree		x	x		x							x
<i>glauca</i>	Swamp She-oak		x	x		x	x	x	x				
<i>stricta</i>	She-oak		x	x		x	x						
<i>Ceanothus</i> spp.	Redroot		x			x		x					
<i>Cedrus deodara</i>	Deodar		x	x		x	x	x	x				
<i>Ceratonia siliqua</i>	Carob		x	x		x	x	x	x				
<i>Cereus peruvianus</i>	Peruvian Apple, Queen of the Night	x					x			x			
<i>Cestrum aurantiacum</i>			x			x	x	x	x				
<i>Chaenomeles speciosa</i>	Japanese Flowering Quince	x	x					x					
<i>Chamaecyparis funebris</i>	Weeping Cypress		x	x		x		x					
<i>lawsoniana</i>	Lawson Cypress			x		x		x					
<i>Clusia rosea</i>	Balsam Apple		x			x							
<i>Codiaeum variegatum</i>	Garden Croton		x			x							
<i>Coffea arabica</i>	Coffee Tree		x			x							
<i>Coprosma repens</i>	Mirror Plant		x	x		x							
<i>Cotoneaster buxifolius</i>			x					x	x				
<i>franchetii</i>	Orange Cotoneaster		x	x		x	x	x	x				x
<i>paniculatus</i>	Red Cotoneaster		x	x		x		x					x
<i>salicifolius</i>	Willow-leaved Cotoneaster		x	x		x		x					
<i>Crataegus laevigata</i>	English Hawthorn	x	x					x					x
<i>phaenopyrum</i>	Washington Hawthorn	x	x					x					
<i>pubescens</i>	Mexican Hawthorn	x	x	x				x					
<i>Cryptomeria japonica</i>	Japanese Cedar			x		x		x					
<i>Cupressus glabra</i>	Blue Cypress		x	x		x	x	x	x				
<i>goveniana</i>	Gowen Cypress		x	x		x		x					
<i>lusitanica</i>	Mexican Cypress		x	x		x		x					x
<i>macrocarpa</i>	Black Cypress		x	x		x		x					
<i>sempervirens</i> var. <i>horizontalis</i>	Common Cypress		x	x		x	x	x	x				
<i>sempervirens</i> var. <i>sempervirens</i>	Churchyard Cypress		x	x		x	x	x	x				
<i>torulosa</i>	Himalayan Cypress		x	x		x		x					
<i>Cydonia oblonga</i>	Common Quince		x					x					
<i>Cytisus scoparius</i>	Scotch Broom		x			x	x	x	x				x
<i>Deutzia crenata</i>	Bridal Wreath		x			x	x	x	x				
<i>Duranta repens</i>	Forget-me-not Tree	x	x			x	x	x	x				x
<i>Elaeagnus pungens</i>	Variegated Oleaster		x	x		x		x					

TABLE 12.—Alien security hedge, garden hedge and windbreak plants that have been used or recommended for use in southern Africa. Scientific names are according to the Liberty Hyde Bailey Hortorium, 1977, and Von Breitenbach (1984) (continued)

Scientific name	Common name	Barrier category				Climatic region					Weed status			
		Security hedge	Garden hedge	Windbreak		Hot and moist	Hot and dry	Cold and moist	Cold and dry		Declared weed	Declared invader	Aggressive	Other
<i>Escallonia</i>														
<i>rubra</i>			x			x		x						
<i>Eucalyptus</i>														
<i>alba</i>	White Gum			x		x								
<i>bosistoana</i>	Box Gum			x		x		x						
<i>botryoides</i>	Bangalay			x		x								
<i>bridgesiana</i>	Apple Box Gum			x		x	x	x	x					
<i>calophylla</i>	White Flowering Gum			x		x								
<i>camaldulensis</i>	Red Gum			x		x	x	x	x				x	
<i>cinerea</i>	Florist's Gum			x		x		x					x	
<i>citriodora</i>	Lemon-scented Gum			x		x	x	x	x					
<i>cladocalyx</i>	Sugar Gum			x		x	x	x	x				x	
<i>cloeziana</i>	Iron Gum			x		x								x
<i>cornuta</i>	Yate			x		x							x	
<i>crebra</i>	Narrow-leaved Ironbark			x		x	x	x	x					
<i>dalrympleana</i>	Mountain Gum			x		x		x						
<i>delegatensis</i>	Alpine Ash Gum			x		x		x						
<i>diversicolor</i>	Karri			x		x								x
<i>elata</i>	River Peppermint			x		x		x						
<i>fastigiata</i>	Cut-tail Gum			x		x		x						x
<i>ficifolia</i>	Red Flowering Gum			x		x								
<i>fraxinoides</i>	White Ash Gum			x		x		x						
<i>globoidea</i>	White Stringybark			x		x		x						
<i>globulus</i>	Blue Gum			x		x		x					x	
<i>gomphocephala</i>	Tuart			x		x							x	
<i>grandis</i>	Saligna Gum			x		x							x	
<i>gummifera</i>	Bloodwood			x		x								
<i>lehmannii</i>	Spider Gum	x	x	x		x	x						x	
<i>macarthurii</i>	Woollybutt			x		x		x						
<i>maculata</i>	Spotted Gum			x		x								
<i>maidenii</i>	Maiden's Gum			x		x		x						x
<i>melliodora</i>	Yellow Box Gum			x		x	x	x	x					
<i>microcorys</i>	Tallow Gum			x		x								
<i>muelleriana</i>	Yellow Stringybark			x		x		x						
<i>nitens</i>	Shiny Gum			x		x		x						
<i>obliqua</i>	Messmaté Gum			x		x		x						
<i>oreades</i>	Blue Ash Gum			x		x		x						
<i>paniculata</i>	Grey Ironbark			x		x	x							x
<i>pauciflora</i>	Snow Gum			x		x		x						
<i>polyanthemus</i>	Red Box Gum			x		x	x	x	x					x
<i>punctata</i>	Grey Gum			x		x								
<i>quadrangulata</i>	Soft White Box Gum			x		x								
<i>radiata</i>	Narrow-leaved Peppermint			x		x		x						
<i>resinifera</i>	Red Mahogany Gum			x		x		x						
<i>robusta</i>	Swamp Mahogany Gum			x		x								
<i>rubida</i>	Candle-bark Gum			x		x		x						
<i>sideroxylon</i>	Black Ironbark			x		x	x	x	x					x
<i>sieberi</i>	Silvertop Ash Gum			x		x		x						
<i>smithii</i>	Blackbutt Peppermint			x		x		x						x
<i>torquata</i>	Coral Gum			x		x	x	x	x					
<i>viminialis</i>	Ribbon Gum			x		x		x						
<i>Eugenia</i>														
<i>brasiliensis</i>	Brazilian Cherry		x			x								
<i>eucalyptoides</i>	Mimi		x	x		x		x						
<i>uniflora</i>	Surinam Cherry		x			x								
<i>Euonymus</i>														
<i>japonica</i>	Spindle Tree		x			x		x						
<i>latifolia</i>			x			x								
<i>Euphorbia</i>														
<i>milii</i>	Crown-of-thorns		x			x	x							
<i>pulcherrima</i>	Poinsettia		x			x	x							
<i>Fabiana</i>														
<i>imbricata</i>			x			x		x						
<i>Feijoa</i>														
<i>sellowiana</i>	Pineapple Guava		x			x		x						
<i>Fucrea</i>														
<i>foetida</i>	Mauritius Hemp	x				x	x							

TABLE 12.—Alien security hedge, garden hedge and windbreak plants that have been used or recommended for use in southern Africa. Scientific names are according to the Liberty Hyde Bailey Hortorium, 1977, and Von Breitenbach (1984) (continued)

Scientific name	Common name	Barrier category				Climatic region				Weed status			
		Security hedge	Garden hedge	Windbreak		Hot and moist	Hot and dry	Cold and moist	Cold and dry	Declared weed	Declared invader	Aggressive	Other
<i>Gardenia</i>													
<i>jasminoides</i>	Common Gardenia		x			x		x					
<i>Gleditsia</i>													
<i>triacanthos</i>	Honey Locust	x	x	x		x	x	x	x			x	
<i>Gmelina</i>													
<i>arborea</i>	White Teak			x		x							x
<i>Grevillea</i>													
<i>robusta</i>	Australian Silky Oak			x		x		x					x
<i>thelemanniana</i>			x			x		x					
<i>Hakea</i>													
<i>gibbosa</i>	Rock Hakea	x	x			x		x		x			
<i>laurina</i>	Sea-urchin Tree		x			x		x					
<i>saligna</i>	Willow Hakea		x	x		x		x					x
<i>Hebe</i>													
<i>speciosa</i>	Veronica		x			x		x					
<i>Hibiscus</i>													
<i>rosa-sinensis</i>	Chinese Cotton Rose		x	x		x	x						
<i>schizopetalus</i>	Japanese Hibiscus		x			x	x						
<i>syriacus</i>	Rose-of-Sharon		x			x	x	x	x				
<i>Hippophae</i>													
<i>rhamnoides</i>	Sea Buckthorn		x			x							
<i>Holodiscus</i>													
<i>discolor</i>			x			x		x					
<i>Hypericum</i>													
<i>chinense</i>			x			x		x					
<i>Ilex</i>													
<i>aquifolium</i>	English Holly		x					x					
<i>Jasminum</i> spp.	Jasmines		x			x	x	x	x				
<i>Jatropha</i>													
<i>curcas</i>	Physic Nut	x	x			x	x					x	
<i>Juniperus</i>													
<i>communis</i>	Common Juniper		x			x		x					
<i>virginiana</i>	Red Cedar		x	x		x	x	x	x				
<i>Khaya</i>													
<i>nyasica</i>	East African Mahogany			x		x							
<i>Lagerstroemia</i>													
<i>indica</i>	Pride-of-India		x			x	x	x	x				
<i>Lagunaria</i>													
<i>pateronii</i>	Pyramid Tree			x		x		x					
<i>Lantana</i>													
<i>camara</i>	Lantana		x			x	x			x			
<i>Laurus</i>													
<i>nobilis</i>	Greek Laurel		x			x		x					
<i>Leptospermum</i>													
<i>laevigatum</i>	Australian Myrtle		x	x		x	x	x			x		
<i>peteronii</i>				x		x		x					
<i>scoparium</i> var. <i>nichollsii</i>	Manuka Myrtle		x			x		x					
<i>Ligustrum</i>													
<i>ibota</i>	Small-leaved Privet		x	x		x		x					
<i>japonicum</i>	Japanese Privet		x	x		x	x	x	x				x
<i>lucidum</i>	Chinese Privet		x	x		x	x	x	x				x
<i>ovalifolium</i>	California Privet		x	x		x		x					
<i>Liquidambar</i>													
<i>styraciflua</i>	Sweet Gum			x		x		x					
<i>Lonicera</i>													
<i>nitida</i>			x			x		x					
<i>Machura</i>													
<i>pomifera</i>	Osage Orange		x	x		x	x	x	x				x
<i>Magnolia</i>													
<i>grandiflora</i>	Laurel Magnolia			x		x		x					
<i>Mahonia</i>													
<i>aquifolium</i>	Holly Mahonia		x			x	x	x	x				
<i>japonica</i>			x					x					
<i>Malpighia</i>													
<i>glabra</i>	Barbados Cherry	x				x							
<i>Melaleuca</i> spp.	Honey Myrtles			x		x	x	x	x				
<i>Metrosideros</i>													
<i>excelsus</i>	New Zealand Bottlebrush		x	x		x							

TABLE 12.—Alien security hedge, garden hedge and windbreak plants that have been used or recommended for use in southern Africa. Scientific names are according to the Liberty Hyde Bailey Hortorium, 1977, and Von Breitenbach (1984) (continued)

Scientific name	Common name	Barrier category				Climatic region				Weed status			
		Security hedge	Garden hedge	Windbreak		Hot and moist	Hot and dry	Cold and moist	Cold and dry	Declared weed	Declared invader	Aggressive	Other
<i>Michelia</i>													
<i>champaca</i>	Champak Magnolia			x		x							
<i>Morus</i>													
<i>alba</i>	White Mulberry		x	x		x	x	x	x			x	
<i>nigra</i>	Black Mulberry			x		x	x	x	x				
<i>Murraya</i>													
<i>paniculata</i>	Orange Jessamine		x			x	x						
<i>Myoporum</i>													
<i>serratum</i>	Manatoka		x	x		x	x					x	
<i>Myrtus</i>													
<i>communis</i>	Common Myrtle		x			x		x	x				
<i>Nandina</i>													
<i>domestica</i>	Japanese Sacred 'Bamboo'		x					x					
<i>Nerium</i>													
<i>oleander</i>	Oleander		x			x	x	x	x			x	
<i>Opuntia</i>													
<i>ficus-indica</i>	Sweet Prickly Pear	x					x		x	x			
<i>Parkinsonia</i>													
<i>aculeata</i>	Jerusalem Thorn		x	x		x	x	x	x			x	
<i>Pedilanthus</i>													
<i>titymaloides</i>	Japanese Poinsettia			x		x	x						
<i>Pereskia</i>													
<i>aculeata</i>	Barbados Gooseberry	x	x			x				x			
<i>Philadelphus</i>													
<i>inodorus</i> var. <i>grandiflorus</i>	Mock Orange		x			x	x	x	x				
<i>Phoenix</i>													
<i>canariensis</i>	Canary Date Palm			x		x	x	x	x				
<i>Photinia</i>													
<i>serrulata</i>	Chinese Hawthorn		x	x		x		x					
<i>Phytolacca</i>													
<i>dioica</i>	Belhambra			x		x	x						x
<i>Pinus</i>													
<i>canariensis</i>	Canary Pine		x	x		x	x	x	x			x	
<i>cembroides</i>	Mexican Stone Pine			x		x	x	x	x				
<i>elliottii</i>	Slash Pine			x		x		x				x	
<i>engelmannii</i>	Apache Pine			x		x		x					
<i>halepensis</i>	Aleppo Pine	x	x	x		x	x	x	x			x	
<i>michoacana</i>	Michoacan Pine			x		x		x					
<i>montezumae</i>	Montezuma Pine			x		x		x					
<i>palustris</i>	Longleaf Pine			x		x		x					
<i>patula</i>	Patula Pine			x		x		x				x	
<i>pinaster</i>	Cluster Pine			x		x		x			x		
<i>pinea</i>	Umbrella Pine			x		x	x	x	x				x
<i>pseudostrobus</i>	False Weymouth Pine			x		x		x					
<i>radiata</i>	Radiata Pine			x		x	x	x	x			x	
<i>roxburghii</i>	Chir Pine			x		x	x	x	x				x
<i>sabiniana</i>	Digger Pine			x		x	x	x	x				
<i>taeda</i>	Loblolly Pine			x		x		x					x
<i>Pittosporum</i>													
<i>crassifolium</i>	Stiff-leaved Cheesewood		x	x		x		x					
<i>eugenioides</i>	Tarata Cheesewood		x	x		x	x	x	x				
<i>rhombifolium</i>	Queensland Cheesewood		x	x		x		x					
<i>temuifolium</i>	Spot-leaved Cheesewood		x			x	x	x	x				
<i>tobira</i>	Japanese Cheesewood		x	x		x	x	x	x				
<i>undulatum</i>	Australian Cheesewood		x	x		x		x				x	
<i>Platycladus</i>													
<i>orientalis</i>	Chinese Arborvitae		x	x		x	x	x	x				
<i>Populus</i>													
<i>alba</i>	White Poplar			x		x	x*	x	x*			x	
<i>x. canescens</i>	Grey Poplar			x		x	x*	x	x*			x	
<i>nigra</i> var. <i>italica</i>	Lombardy Poplar			x		x	x*	x	x*				x
<i>nigra</i> var. <i>italica</i> cv. <i>sempervirens</i>	Chilean Poplar			x		x	x*	x	x*				
<i>wislizenii</i>	Valley Match Poplar			x		x	x*	x	x*				
<i>Prosopis</i>													
<i>glandulosa</i>	Mesquite		x	x		x	x	x	x		x		

* in moist localities only

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Scientific name	Common name	Barrier category			Climatic region					Weed status			
		Security hedge	Garden hedge	Windbreak	Hot and moist	Hot and dry	Cold and moist	Cold and dry		Declared weed	Declared invader	Aggressive	Other
<i>Prunus</i>													
<i>cerasifera</i>	Cherry Plum		x				x						
<i>cerasifera</i> cv. <i>atropurpurea</i>	Purple-leaved Plum		x		x		x						
<i>laurocerasus</i>	Cherry Laurel		x				x						
<i>serotina</i>	Black Cherry			x	x		x						x
<i>Punica</i>													
<i>granatum</i>	Pomegranate	x	x					x					
<i>Pyracantha</i>													
<i>angustifolia</i>	Yellow Fire-thorn	x	x		x	x	x	x			x		
<i>coccinea</i>	Red Fire-thorn	x	x		x		x				x		
<i>Quercus</i>													
<i>canariensis</i>	Algerian Oak			x	x		x						x
<i>cerris</i>	Turkey Oak			x	x		x						
<i>coccinea</i>	Scarlet Oak			x	x		x						
<i>ilex</i>	Holly Oak			x	x	x	x	x					
<i>incana</i>	Hairy Oak			x	x		x						
<i>mexicana</i>	Mexican Oak			x	x		x						
<i>nigra</i>	Water Oak			x	x		x						
<i>palustris</i>	Pin Oak			x	x		x						
<i>reticulata</i>	Evergreen Oak			x	x		x						
<i>robur</i>	English Oak			x	x		x				x		
<i>suber</i>	Cork Oak			x	x	x	x	x					x
<i>Raphiolepis</i>													
<i>indica</i>	Indian Hawthorn		x										
<i>Rhamnus</i>													
<i>alaternus</i>	Italian Dogwood		x		x	x	x	x					
<i>Rhododendron</i> spp.	Azaleas and Rosebays		x		x								
<i>Ribes</i>													
<i>sanguineum</i>	Flowering currant		x				x						
<i>Rosa</i> spp.	Roses	x	x				x						
<i>Salix</i>													
<i>bonplandiana</i>	Mexican Willow			x	x		x						
<i>Schinus</i>													
<i>molle</i>	Pepper Tree			x	x	x	x	x				x	
<i>terebinthifolius</i>	Brazilian Pepper Tree		x	x	x		x					x	
<i>Spartium</i>													
<i>junceum</i>	Spanish Broom		x		x		x						x
<i>Spathodea</i>													
<i>campanulata</i>	African Flame Tree			x	x								
<i>Spiraea</i>													
<i>prunifolia</i>	Cape May		x		x	x	x	x					
<i>salicifolia</i>			x		x		x						
<i>Stenocarpus</i>													
<i>sinuatus</i>	Firewheel Tree			x	x								
<i>Syncarpia</i>													
<i>glomulifera</i>	Turpentine Tree			x	x								x
<i>hillii</i>	Hill's Turpentine Tree			x	x								
<i>Syzygium</i>													
<i>jambos</i>	Malabar Plum			x	x								
<i>paniculatum</i>	Australian Water Pear		x	x	x								
<i>Tamarix</i>													
<i>aphylla</i>	Desert Tamarisk			x		x							
<i>gallica</i>	French Tamarisk		x	x	x	x	x	x					
<i>ramosissima</i>	Pink Tamarisk		x		x	x	x	x			x		
<i>Tecoma</i>													
<i>stans</i>	Yellow Bells			x	x		x						x
<i>Thuja</i>													
<i>occidentalis</i>	American Arborvitae		x				x						
<i>Trichocereus</i> sp.		x						x					x
<i>Tristania</i>													
<i>conferta</i>	Australian Box			x	x		x						
<i>Ugni</i>													
<i>molinae</i>	Chilean Guava		x				x						
<i>Ulmus</i>													
<i> davidiana</i> var. <i>japonica</i>	Japanese Elm			x	x		x						

TABLE 12.—Alien security hedge, garden hedge and windbreak plants that have been used or recommended for use in southern Africa. Scientific names are according to the Liberty Hyde Bailey Hortorium, 1977, and Von Breitenbach (1984) (continued)

Scientific name	Common name	Barrier category				Climatic region				Weed status			
		Security hedge	Garden hedge	Windbreak		Hot and moist	Hot and dry	Cold and moist	Cold and dry	Declared weed	Declared invader	Aggressive	Other
<i>Ulmus</i>													
<i>glabra</i>	Scotch Elm			x		x		x					
<i>parvifolia</i>	Chinese Elm			x		x		x					x
<i>procera</i>	English Elm			x		x		x					x
<i>pumila</i>	Siberian Elm			x		x		x					
<i>Viburnum</i>													
<i>tinus</i>	Laurustinus		x			x		x					
<i>Yucca</i>													
<i>aloifolia</i>	Spanish Bayonet	x				x							
<i>elephantipes</i>	Spineless Yucca	x				x		x					

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Scientific names of indigenous and naturalized alien species are according to Gibbs Russell *et al.* (1985) and Gibbs Russell *et al.* in prep. Common names of indigenous species are according to De Winter *et al.* (1978) unless otherwise stated in Tables 1 & 7. Scientific and common names of alien species are according to The Liberty Hyde Bailey Hortorium 1977, and Von Breitenbach (1984). Species names in *italics* are synonyms. Asterisks indicate alien genera, species and common names.

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